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B. BURGESS, CAPTAIN,
Secretary.

WHITEHALL YARD,
July, 1885.



The Journal
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Friday, March 27, 1885.

MAJOR-GENERAL SIR ANDREW CLARKE, K.C.M.G., C.B., C.I.E., R.E., &c., &c., in the Chair.

RECRUITING FOR HER MAJESTY'S SERVICE.

By Lieut-Colonel J. McD. MOODY, R.M.L.I.

HAVING personally had five years' experience of the Recruiting Service, in, I may say, all its phases, and to a certain extent all its branches, I am anxious to lay the result of my experience before the members of this Institution, with a hope that the discussion which will follow may have the effect of calling attention to the matter, and inducing the British public to devote to it that sympathy and goodwill without which the present shortcomings can never be removed.

I have entitled my paper "Recruiting for Her Majesty's Service," but as Army recruiting is the burning question of the day, I shall, to a great extent, confine myself to recruiting for the land forces.

Recruiting for the Army.

In a volunteer Army like ours, it will be readily admitted that the question of recruiting in its broadest sense is all-important. When we consider that the only means of obtaining the material out of which our soldiers are made is by going into the open labour market, and competing there with the various industries which, to men of energy and ability, offer prospects of comfort and independence, if not wealth, we need no argument to convince us that the services of the Crown can only attract good men by offering inducements fairly proportionate to those present in other walks of life. The subject has for many years past engaged, and still continues to engage, the attention of public men. So many Royal Commissions and Committees have been appointed to investigate the difficulties in connection with recruiting, that it might be imagined the knotty question has been solved, and that we have now the most perfect and successful system that could be devised. So far, however, as the Army is concerned, this is evidently not the case. Up to last year there were grave deficiencies both in the quality and in the quantity of the recruits.

According to the latest Returns the deficiency, so far as quantity is concerned, is in a fair way of disappearing, owing partly to war enthusiasm, partly, it is said, to commercial depression, and partly to the new system of very short service, with option of prolongation. The new system also of training Militia recruits immediately after attestation at the depôt of the territorial regiment, has caused a considerable influx into the Line, of men originally enlisted in the Militia. This, however, is anything but an unmixed good, for the practice has been largely influential in making the Militia a mere feeder to the Line, thus rendering the Militia by many thousands below its establishment. Some steps are, however, being taken to induce men who have passed through the Army Reserve to enrol for the Militia.

Before going into what I consider to be the causes of, and the remedies for, the present unsatisfactory state of things, I will briefly review the terms of service which have from time to time been in force in the Army. These terms have always been regulated by the Army Enlistment Act for the time being. During the last century short service was common. Through popular jealousy of the Crown, men were embodied for war, and disbanded on its conclusion.

Previous to 1782 service was occasionally compulsory. Increase of Colonial Empire and difficulties of reliefs at length necessitated the passing of an Act of Parliament by which life service was authorized, and this system was principally in vogue at the close of the 18th century. In 1806, during the great wars with Napoleon, Wyndham's Act was passed, introducing short service, the first term being seven years in the infantry and ten in the cavalry. Two subsequent engagements of seven years and five years respectively were permitted. In 1808 unlimited service was again introduced. A recruit had the choice of either limited service with a small bounty, or unlimited service with a large one. He generally chose the latter. In 1829 what was termed life service was again introduced, and was the recognized system for nearly twenty years from that date. Life service at that time, however, did not, as a rule, exceed twenty-one years in the infantry, and twenty-four in the cavalry.

In 1847 the Limited Service Act was passed, under which no person was enlisted for more than ten years in the infantry, and twelve years in other branches. If willing and approved, the soldier could re-engage for eleven years in infantry and twelve in other branches.

In 1855, during the war with Russia, an Act was passed, to be in force for three years, by which any person might be enlisted for any period not exceeding ten years in infantry and twelve in other branches, as authorized by Her Majesty's Order in Council. Three years' enlistment was authorized under this Act. The Act was renewed for a second period of three years, but as no Order in Council was issued, it did not come into operation. The Act of 1847 remained in force, with little modification, until 1867, when, on the recommendation of the Recruiting Commission of 1866, an Act was passed altering the division of service from ten and eleven years to twelve and nine, with re-engagement so as to complete twenty-one years. These terms continued until short service was introduced in 1870. To

quote from an excellent pamphlet,[1] by Captain White, who has made the recruiting question his especial study:—

"The idea of systematic, unmixed short service in the British Army arose from the magnificent results which it had shown during the Franco-Prussian war of 1870-71.

"The chiefs of the English military organization had just awoke to the fact that they had no reserve to fall back upon, and that one day of such slaughter as took place at Wörth or Gravelotte would leave gaps in the only army corps England could put in the field, which it would be difficult, if not impossible, to fill. They had seen a whole nation of trained and disciplined men spring up, fully organized and equipped, and, grouping themselves without hitch or friction around their varied centres, move to all intents and purposes as one machine. As one body passed to the front, its place was supplied from efficient reserves, until over a million soldiers were on their way marching in an ever-increasing stream rapidly, silently, relentlessly to avenge the honour of their fatherland.

"Throughout a war involving life or death to Germany, the system stood the fearful strain, and, without a single breakdown, in six months, brought the people which had held the arbitrament of European affairs for a quarter of a century helplessly and hopelessly to Von Moltke's feet.

"The result simply made Europe stand aghast, with mingled admiration, relief, and fear lest the conqueror should use his awful power for illegitimate ends. England became nervous. She compared her own showy but unsupported Army with the marvellous cumulative force of Germany's sustained efforts, and, grasping at the results without calculation of the means employed to produce them, immediately started a short-service system of her own."

The system of bounty had been abolished in 1867, having been in force for over seventy years. The Army was, as usual, below its establishment, and there were no great inducements to draw men to the ranks. It may interest my audience if I here give a brief sketch of the progress and vicissitudes of the bounty system. When recruits were required, the standard was lowered, and a sum of money given on enlistment, varying according to the urgency of the case, the highest being 16*l.* 16*s.* in the early part of the century. Out of this bounty, however, a full kit had to be provided. In 1855 a free kit was given, and the bounty reduced to 5*l.* The free kit has since been continued, but the bounty was gradually reduced to 1*l.*, and, as I said before, was finally abolished in 1867.

It was an almost unmitigated evil, for as recruiting rendezvous were always established in public-houses, it tended to produce great demoralization both in recruiters and recruits. Yet, even practical men were singularly unwilling to recommend its discontinuance. The Royal Commission of 1859 suggested its being paid in instalments, and that of 1866, that it should not be increased.

Until 1879 recruits were enlisted by means of the "Queen's shilling," and even now many persons still believe in its existence. Probably for many years to come it will remain as the synonym for initiation into military service. After receiving the shilling, the recruit could not be attested for twenty-four hours, nor after ninety-six hours from the time of his enlistment. A large number of desertions took place between the enlistment and the attestation. In

[1] "Short Service and the Employment of Reserve Soldiers," by Captain C. W. White (1885, Cousins & Co.).

1859, out of a total of 11,000 desertions, 2,500 were accounted for under this head.

At the present time, when a man offers himself for enlistment, he receives, instead of the traditional shilling, a notice paper, instructing him as to where and when he is to present himself for attestation; but this is in no way binding on him, and he incurs no penalty should he fail to appear. Even after attestation he may claim his discharge within three months, on payment of 10*l.*

Down to 1860 the soldier's position was but an indifferent one; but owing to the reforms inaugurated by Mr. Sydney (afterwards Lord) Herbert, when Secretary of State for War, and continued by his successors, the position of the rank and file has been vastly improved. Clothing and pay have been increased, better food has been given, hospitals have been established, sanitary arrangements attended to, and conditions of service relaxed. Yet the fact remains that the Service is still unpopular amongst those classes from which our recruits should be drawn. All the efforts of succeeding War Ministers have failed to attract *men* to the ranks, and the boys who form the great bulk of the recruits are not as a rule of the stamp which will develop into the best type of the British soldier. The waste, moreover, is enormous from invaliding, desertion, purchase, discharge of bad characters, and a floating prison contingent. Legislation has done all it can in the matter with comparatively little success. For fifteen years one constant succession of changes has been going on, and one experiment after another has been tried to achieve the two great ends which the country has in view, namely, the creation of a numerous, efficient, and contented Army, and a reliable Reserve.

I am not going to enter into the merits or demerits of short service, which Lord Cardwell instituted in 1870 as a panacea for the then existing evils. It would be difficult to indicate any plan likely to keep up the Army and produce a Reserve which had not a large element of short service in it. Yet, as a system, short service has admittedly failed. It was established on the most uncompromising grounds. Long service was to be quite abolished, and six years with the colours and six with the Reserve to be the extreme limit of the soldier's engagements. Pensions, it was supposed, would gradually decrease, and a large and efficient Reserve be created. Owing to the great waste, however, the Reserve did not grow as rapidly as had been anticipated, and the ranks were not filled. So bad did the state of things become that even a system of bounties was tried two years ago, and men were offered 10*l.* in India and 2*l.* at home to re-engage. The latest modification is the present method of "free service," by which a man can take his choice between short and long service. In the Guards three years with the colours and nine in the Reserve, and in other branches of the Service seven years with the colours and five in the Reserve, is the recognized system. In all cases practically continuous service up to twenty-one years, with a pension, is allowed. It will thus be seen that the terms of enlistment are now as elastic as possible, and compare favourably with those in force at any former period.

The conditions and all particulars concerning enlistment are so

widely circulated that they are within the reach of every one. They can be obtained at every village post office throughout the kingdom, and are prominently displayed in every town of importance, besides being circulated by means of advertisements, pamphlets, and the Volunteer Permanent Staff.

And yet, notwithstanding this, the recruits are too often of the wrong class, and the waste is enormous. The Report of the Inspector-General of Recruiting shows that during last year, 1884, we lost—

(*a.*)	By desertion	4,478
(*b.*)	„ invaliding.....	2,962
(*c.*)	„ discharge by purchase (1,751 under three months' service)	3,603
(*d.*)	„ discharge (bad characters)	940
	Total	11,983

exclusive of men whose services were temporarily lost by imprisonment, the average number of whom was 1,512.

The causes of this unsatisfactory state of things have been admirably stated by Captain White in the pamphlet to which I have already referred. He says:—

"In a rich commercial nation like ours, the arts of peace have so thorough a supremacy, that military matters are regarded during peace with a large amount of indifference, mingled with a good deal of impatience at the big figures representing the cost of armed forces, which are looked upon as more or less extraneous to the habitual life of the country.

"Moreover, the individual members of our community are so imbued with the principles of personal freedom, that the discipline and self-abnegation of a soldier's life are instinctively distasteful to them. There is so great a struggle for wealth and position, and the prizes offered in the professional, mercantile, and trading world are so many and so large, that all the best talent of the country is enlisted in the now exciting battle of civilian life. Consequently, the only material at the disposal of the military authorities may be divided into two classes, viz., those who by some want either of physical or mental energy are left behind in the struggle for existence, and those restless spirits who take to soldiering because their flighty dispositions render them incapable of the calm concentration necessary for civil success. It is therefore either dire necessity or the infirmity of purpose of youthful vagaries that induces Englishmen in these days to don the uniform of the Sovereign."

But, besides these predisposing causes, the treatment of the soldier by his fellow countrymen is a deterrent to the influx of suitable recruits. I cannot do better than once more quote the words of Captain White:—

"In England the soldier is at a disadvantage on all sides. In spite of the increased tolerance which the Volunteer movement has given him, he is looked upon generally with distrust and disdain. His uniform subjects him to insult and contumely in places where the humblest of his fellow citizens are treated with consideration and deference. No 'respectable' person cares to be seen in the company of a 'common soldier.' If he comes of even a moderately well-to-do family, he cannot join them socially, for fear of the disgrace and contamination of his inferior station."

This fact does not arise from any want of military spirit in the

nation. The Briton is, as he always has been, a fighting animal. The almost unaided development of the Volunteer movement is a very strong proof of it, and has produced a body of over half a million of men (including those who have left the ranks) more or less trained to the use of arms. It is the *regular* service only which is looked down upon from the social point of view, and this disdain militates against really successful recruiting.

The internal causes are equally prejudicial. We do not make the Service pleasant to the men who are in it. Their tastes and intelligence are not sufficiently appealed to. In the matter of discipline they are treated rather as children than as reasoning and responsible beings. Our system of passes and furloughs is worrying, and our punishments by their frequency lose their deterrent effect. The food even now is insufficient and badly served, and the barrack-room is too often so uncomfortable as to drive the soldier from what should be his home to the public-house. I am convinced that a remedy may be found for this state of things, but it is only by enlisting the sympathy and co-operation of our fellow countrymen and countrywomen.

Aids to Recruiting.

For successful recruiting it is necessary—

1st. To bring the most desirable class of men into the Service.

2nd. To induce them to remain in it; and

3rd. To provide for their future when they leave.

I will take each of these in turn.

1st. To get the most desirable men, we must secure the sympathy and assistance of every class in the country. We can only do this by showing that the training which the soldier receives during his term of service is one which will, at the end of it, turn him out a better, or at any rate, not a worse man than he was at the beginning.

The reason that we cannot show this now is that we do not sufficiently realize that the Army should be a National Training School, instead of what I fear it is now thought to be,—a National Reformatory. As long as this Reformatory impression is abroad, we shall have difficulty in either getting a superior class into the Service, or if we *do* get them, in inducing them to remain.

But if we get good men and keep them, we shall be in a fair way towards solving the difficulties in connection with the employment of Reserve men and discharged soldiers; we shall be able to provide for their future. To this point I shall presently recur.

The demoralization of the Army would thus be prevented, and the vast expense incurred by the avoidable waste would quickly disappear. Looking at the latest Returns dealing with this matter, I find that if this drain had not existed during 1884, we should this year require a less number of recruits by nearly 12,000 men, and save thereby something like 500,000*l*.

In 1880, Lord Airey's Committee reported that desertion alone cost the country 350,000*l*. This was the direct cost: but still more important than the cost was the demoralization of the deserters

themselves, and the harm they did the Service wherever they spread through the country. Those discharged as bad characters were even more mischievous. They were freer to recount their experiences, and to poison the minds of their fellow countrymen. These evils can only be remedied by enlisting the sympathy of the public in the matter.

To tell a labouring man in the street that he is personally interested in the class of men who join the ranks of the Army would elicit a reply more forcible than polite. Yet if he could be persuaded that the ounce of tobacco which he has just bought might be purchased for 3*d.* instead of 3½*d.*, he might see it in another light. In the same way the citizen in broadcloth is surely interested in the number of pennies he has to pay as income-tax towards the support of the Army, that number depending to a great extent on the quality of our recruits.

I am not therefore unreasonable in urging all classes, on pecuniary as well as on patriotic grounds, to assist the authorities in raising efficient men to keep up the war establishments voted by Parliament and deemed necessary by it for the defence of our great Empire.

Taking into consideration the fact that we are committed to voluntary enlistment, the antagonism existing among the general public to recruiting was formerly a matter of surprise to me. Not only is there no assistance given to recruiters, but obstacles are actually thrown in their way by all classes. The English people have the credit for retaining prejudices; and the prejudice against recruiting is one of their strongest. That recruiting is conducted on the Sergeant Kite system is still firmly believed by many. The reason, I suppose, is that the public see the indifferent specimens which we receive, and who disgrace themselves and their uniform, thereby discrediting the good men who enter and remain in the ranks. This feeling has become a tradition now, handed down from the times when the Army was notoriously the sink of the nation, and when its punishments were almost necessarily cruel and excessive.

Those days are now happily past, but their impression remains. It is still considered derogatory to the position of a respectable artizan or even a young labourer to enter the ranks of the British Army; and many a mother in humble life would weep less at her son's getting into trouble before a magistrate than at his going to seek his fortune in what ought to be one of the most respected professions in civilized life.

The remedy for this erroneous impression, as well as for the avoidable waste, is to take care that undesirable characters are kept out. The more successful we are in this, the better men we shall get in; this I have found in my own corps. To keep them out let recruiting Officers look to quality instead of quantity. By neglecting to do so we are reduced to the necessity of keeping 5,000 men in prison, and of paying a number of others to look after them.

But the question may be asked: "How are we to judge whether a man is desirable?" Get a character if possible. I trust we shall eventually come to that, even if we have to wait some time. Failing

an authentic character, in cases of doubt, use the telegraph. This is what we do under the Admiralty, and with the best results. Since I have held my appointment I have saved the public large sums by its liberal use. Admiralty telegrams are forwarded free; War Office telegrams must be prepaid and charged. Why they, too, should not be free I cannot understand: it is only one Government Department helping another. A reference by post is a question of days; by the telegraph, of minutes. Moreover, a suspicious character will generally make off before the message leaves the office. I always make a great show of sending it. In nine cases out of ten, an experienced recruiting Officer will detect a fraudulent enlister; this is one means of prevention.

Another is to improve the method of detecting desertion. The "Police Gazette" as at present employed is useless. A deserter's name is published about three times. It should be kept in three months. The place where he lived for twelve months before enlistment, and his descriptive marks three months after it, should be particularized, and both should be added to the attestation paper. The name of any constable detecting a deserter, the amount of his reward, and the date of his receiving it, should also be published as an inducement to the force. I understand that a contribution from the War Office would be necessary to meet the expense of this publication.

Of course the surest method of detecting deserters and preventing fraudulent enlistment would be by vaccinating in an unusual place. This was recommended by Lord Airey's Committee, and on several other occasions, but the authorities have not yet seen their way to adopting this apparently simple precaution. Vaccination is a simple sanitary measure, and if so done to every soldier—Officer or man—there would be nothing invidious in it.

I will now endeavour to indicate the best method of inducing good and desirable men to remain. The recruits which we get are for the most part little better than boys, and according to the Inspector-General's recent Report we are not to expect much else.

We may take for granted that they are healthy lads, as 428 are rejected out of every 1,000 applicants for admission. Being immature, they require feeding; the quality and quantity of their rations should be increased, their barrack-rooms should be improved, and, by introducing a higher tone, crime should be diminished.

Whilst maintaining a strict but reasonable and reasoning discipline, let Officers recollect that the soldiers with whom they deal are, to a certain extent, educated men—educated so far as to read the daily and weekly papers, and to discuss the topics of the day amongst themselves. They are quite capable of forming opinions on matters which concern their own interests.

These opinions can, I believe, be influenced considerably by their Officers. The influence of Officers or those serving under them is enormous, and is not, I believe, fully realized. The public services of the country are officered by the flower of the nation, drawn principally from the upper middle classes; they are carefully educated and

trained morally, socially, and intellectually, and are justly recognized as typical English gentlemen. English Officers, therefore, can always command the confidence and esteem of their men when brought into close contact with them. When exceptional difficulties and dangers have to be encountered, the British Officer who is foremost himself in taking his share will be, and always is, cheerfully and unhesitatingly obeyed. In no case has this been more clearly shown than in the recent operations up the Nile and in the Soudan.

A campaign is, however, incidental in the career of a British soldier—the uneventful garrison life at home and abroad, with all its manifold temptations, occupying the greater portion of his colour service. It is here that character and health are too often ruined, and the foundations of future misery too often laid. Here it is that an Officer's influence can and should be brought to bear advantageously, but is, I fear, very commonly ignored. I do not speak only of the Officers in the higher ranks, but of every Officer in the Service. A company Officer, no matter what his rank, has often more influence with the men of his company than the Commanding Officer, as he is brought daily into more intimate connection with them. This influence should be exercised, and would soon be felt. A kindly word of encouragement and sympathy would often allay irritation, and thus prevent crime. Prevention is better than cure, and it should always be recollected that anyone can punish. The wise man punishes with judgment, and is often able to prevent the crime which, if committed, would render punishment necessary.

Crime and Punishments.

I cannot too strongly emphasize, and I repeat, that the Services are not reformatories. They are and should be considered in the light of national training schools. Now that localization is gaining ground (upwards of 50 per cent. of the recruits in 1883 and 1884 having been raised in their own districts) a more reasonable discipline is all the more necessary. Punishments should be made exceptional: as crime decreases they will become less familiar, and the dread of them will greatly increase. At present, owing to their familiarity, they lose what should be their aim and end, viz., their deterrent effect. Imprisonment is thought little of because so many undergo it; and the guard-room is looked upon as a matter of course. While on the subject, I would remark that it seems to me most objectionable that any man should be confined to the guard-room except under the direct authority of an Officer.

I have seen both systems tried in my thirty years' service, and there is no comparison in results. I have seen flogging utterly fail to preserve discipline, and I have seen the moral influence alone of determined Officers preserve it.

The Returns for 1883, published by the Inspector-General of Military Prisons, show fully the offences for which men were tried, the sentences awarded, and the punishments inflicted, in each arm of the Service at home. These show that in the Army at home, num-

bering 86,000 men, 7,526 were tried by court-martial during that year. Of these one-fifth were non-commissioned officers, of the entire body of whom one-tenth were thus reduced or imprisoned during the year.

The Report of the Brixton Military Prison shows that out of a total of 1,113 men passing through that institution in 1882, 53 had less than 1 month's service; 254 between 1 and 6 months' service, and an aggregate of 652 under 2 years' service. The terms of imprisonment varied from 56 to 672 days. Considering the youth of the Army, it will be as well to bear in mind the class of crime for which these sentences were awarded. We glean this from the Report of the Governor, who states that the prisoners under his charge were mostly lads "who have given but little trouble." And in his Report for 1882 he says: "In regard to soldiers returning to the ranks, it must be borne in mind that many are mere youths, hardly more than soldiers in name, many having joined their respective corps but a few months, and frequently not even dismissed recruit drill, and their breaches of rules and regulations are to a great extent caused by ignorance and the absence of moral training, most having been allowed to run wild and uncontrolled." It is not creditable to our system that the Governor of the largest military prison, with an aggregate of 1,644 inmates, should find it his duty to make such a report.

On the other hand, other Returns showing previous convictions reveal the fact that in 1882 and 1883 men were retained in the Service who had actually been convicted eleven times, and some six times for the same offence. The statement is hardly credible. In addition to the court-martial awards, out of an average strength of 85,900 men, over 140,000 minor punishments were inflicted by Commanding Officers, or 163 per cent. Up to last year, military and naval prisoners were often sent to civil prisons; but, except for shameful crimes, this practice has been discontinued. The cost of escort was, and is now most scandalous, while the sight of a man in military uniform being conducted, handcuffed, through the streets, cannot but be most detrimental to recruiting. I believe the remedy is to give Commanding Officers more power—the same, for instance, as is entrusted to naval Captains; and, as far as possible, to carry out all sentences locally, in cells or military prisons, near their head-quarters. The prisoners might be employed in all the dirty jobs within the barracks, where they could be seen by their comrades. I am confident that the ridicule to which they would be subjected would be more efficacious as a deterrent than all the punishments that can be inflicted within the prison walls. Of all the useless punishments shot drill is the worst, and yet in some military prisons, and in all cells, it is the only employment available.

Drunkenness has to answer directly or indirectly for seven-tenths of our military crime. To custom, idleness, bad liquor, and want of nourishing food this crime may be ascribed. Custom can only be abolished by establishing a public feeling in the Service against excess in liquor. The influence and example of Officers will here be most useful; and if they will take the matter earnestly in hand, I feel sure

the evil can and will be checked. They must begin with the non-commissioned officers, and look well after the canteens and sergeants' messes. A word in time to a non-commissioned officer or man who smells in the morning like a stale tap-room will frequently cause him to desist before he actually commits himself. Bad liquor should not enter the barracks, but as I will refer to this when I speak of canteens, I will pass on to bad liquor outside the barracks. I have the greatest compassion for men who get drunk in the town. Nine times out of ten it is the vile liquor which causes drunkenness. As the magistrates have so plentifully supplied us with public-houses in our garrison towns, right up to our barrack gates, it would not be too much to ask them to help to undo some of the evil of which they have been the causes, by making it compulsory for the public-houses to supply wholesome liquor. The Adulteration Act is equally applicable to ale or spirits as to milk, and the publican could be prosecuted as easily as the dairyman: there can be no doubt that he as often deserves it. As to the insufficiency of nourishing food I will speak hereafter.

Idleness is the last point which causes not only drunkenness but other crimes. What employment can you give an infantry soldier besides drill and ordinary fatigues? Cavalry, artillery, engineers, and the departments have plenty to do, but the infantry have the bulk of their time on their hands. It may be taken, as a rule, that after 3 o'clock daily an infantryman's time is his own. Without resources, confined to within a mile of his quarters, what is he to do? Regimental workshops have been tried, but I fear only in a half-hearted way. The idea is excellent, and should be developed as much as practicable. The men should be kept at something daily, and all day, giving them their night in bed when possible, and their Saturday free after cleaning their barracks. After constant employment during the day, they will be only too glad to keep to their barracks at night. On Saturday they can get away for a long walk into the country. Abolish the mile radius; it is an absurd restriction, and one which tempts to disobedience. Why should not a soldier have his country walk when at leisure, instead of boozing in town? A pass would no doubt be granted, but a man has not always the forethought to ask for one. I should also be inclined to remove the 10 P.M. restriction, and allow men to come into barracks until midnight. Punishment should be short and sharp; a lengthened confinement to barracks is the cause of men breaking out of barracks. A shorter term, with more work, would remove the temptation.

Selling necessaries is a frequent crime. Why only the soldier should be punished, I do not know. The civilian purchaser is also liable, yet within my experience I have never known one convicted; although in 1883 no less than 1,626 soldiers were tried for this offence.

Food.

I now proceed to speak of "Food," a subject which was most ably

treated by Lieutenant-Colonel Tulloch in this theatre last June,[1] whose paper every Officer who has any interest in his men should study attentively. We appeal to all animals through the stomach, and as man is no exception to the rule, we may be sure that the recruit is no exception to the man. The Government peace ration of $\frac{3}{4}$ lb. meat and 1 lb. bread still continues, although an increase has been frequently advocated. This increase cannot be too strongly urged.

In the paper to which I have referred Colonel Tulloch has shown, by an exact analysis of the soldier's ration, that it is chemically insufficient even for adults doing light work, but still more so for growing lads who are kept hard at work at instruction drill for the greater part of the day. Colonel Tulloch recommends an addition of 1*d.* a day to the messing. I should much prefer the addition of $\frac{1}{4}$ lb. of meat, even at the increased outlay of 200,000*l.*

I am also greatly in favour of Navy cocoa referred to by Professor De Chaumont, as quoted by Colonel Tulloch; the old-fashioned ordinary Navy cocoa, which contains 80 per cent. of pure cocoa, and 20 per cent. of sugar. If well cooked (and it needs five hours' boiling), it would supply a good sustaining beverage for early morning and for breakfast, and would go far to prevent that sinking of the stomach which so often first drives the young soldier to the tap. It could be supplied at very small cost from the Admiralty Stores, and though there might be some departmental difficulties or Custom House objections, I presume these might be easily overcome.

The scale of diet amongst the labouring classes is gradually improving, and before long it will be necessary to make corresponding changes in that of the soldier on home service if we want to get recruits of proper physique, or to give Nature a chance of turning growing lads into strong men.

Colonel Tulloch refers to the importance of a careful inspection of all articles of food supplied to the soldier. As this is one of the first duties of the subaltern, it cannot be too strongly impressed on his mind. If the useless visits to the barrack-rooms during meals were discontinued, and the time were spent at the cook-house and provision store, some benefit would result. The Officer should be at the cook-house a reasonable time before each meal; after the meals are issued, and dinner more especially, he should be ready in case of complaints. He might visit a few rooms, but not attempt to go round them all. The dinners should be sent direct from the cook-house, in messes, to the barrack-room, and care should be taken that they be served hot.

Barracks.

I now come to the question of barracks.

The comfort of the soldier's barrack-room has not been sufficiently considered. A great deal has rightly been done for his amusement in the way of spacious and comfortable recreation rooms with billiards and bagatelle, libraries, skittle alleys, fives and racket courts, and

[1] "Journal of the Royal United Service Institution," vol. xxviii, p. 778.

theatres. Improved cooking houses have been added from time to time, but except to some extent at the new depôt barracks, nothing has been done to improve the man's real home—his barrack-room. There are the same whitewashed walls; a shelf for clothing, exposed to all the dust; a straw paillasse renewed quarterly, for the first fortnight as round as a drum, and for the last as flat as a pancake, and not much thicker; an old-fashioned ridge iron-bottomed bedstead; a grate calculated to burn the greatest quantity of coal and give the least amount of heat; and a soft deal floor, which is alternately filthily dirty and soaking wet. The size of the room also precludes all idea of cosiness and comfort. We have only to examine them to realize how little we should like to live in them ourselves. The standard of home comfort throughout the country in the classes from which we should like to obtain our recruits has risen considerably. Great improvements have also been made in all public institutions. Look at the wards of any of our County Asylums for an example of what a barrack-room should be; look at the wards of an old-fashioned workhouse for what they are. We want to get a self-respecting class of men into the Service, and when we have got them we want to keep them. Let us level up our standard of comfort, and we shall go a long way towards success. It need not be done at once, but gradually, keeping in view what is requisite. The expense need not be felt, as it may be spread over a considerable time. A great deal will be done by the men themselves if they are encouraged to do it. If it is impressed on them that their comfort is attended to, you may depend on their meeting you more than half way.

It would be well to divide the rooms where it is possible to do so, so that not more than eight or ten men should be in one room; also to add a few wooden chairs; to give each man a small cupboard at the head of his bed, with a top on which he could write his letters, and with shelves for his clothes. His bedstead should be improved, the iron being replaced by sacking, which could be washed, and the uncomfortable straw by a hair mattrass. If hair should be deemed too costly, chopped straw might be substituted. A modern grate should be put in; the saving in coal would soon reimburse the cost. As floors wear out, pitch pine should be substituted for deal. The rooms should be better lighted, and gas regulators should be introduced to stop the present great waste of gas. Wherever possible, varnish might be advantageously substituted for paint. The walls might be coloured in distemper, and neatly stencilled. The baths and washhouses should be improved, and the beastly tubs abolished. The men should be taught to take a pride in their barrack-rooms; they should be moved as seldom as possible, and a system of Dutch cleanliness should be enforced throughout the Service, which it would greatly benefit.

It would surely be no difficult matter to induce the men to take a pride in their rooms, and to vie with each other as to which room should be in the best order. If once such a feeling was established, "barrack-damages" would speedily become a thing of the past, and the addition to the men's comfort would be enormous.

Furlough.

I now come to the question of furlough, which to my mind is not at all well managed at present. If we really desire men to remain and be happy in the Service, we should give them furlough as often as they can be spared, and encourage them to spend that furlough with their friends. Nothing is more conducive to the acquisition of recruits, especially in the country districts which supply our best material, than the presence of a smart, happy, and respectable soldier, with money in his pocket, and nothing but good accounts on his lips concerning his Service life. As a practical example of the effects of soldiering, he is worth more than the most persuasive recruiting sergeant, for his opinion will be received with confidence as being unbiassed, and the result of experience without prejudice. If, combined with a greater frequency of furlough, the present system of furlough money were changed, the benefit accruing would be greater still. The practice of giving a man a lump sum for his furlough is a temptation to spend it at once, very probably in debauchery and drink in a large town. He then goes home to be a burden to his friends, and a discredit to his profession. It would be infinitely better to remit his money by weekly instalments. He would then always be independent and with cash in his pocket, while the mere fact of his regular supplies coming down would increase his importance among his associates, and so tend to bring in recruits.

His pocket should be eased by inducing the railway companies to take him at half fare, a single fare for return journey, as the suburban lines now do the volunteers. They would rather gain than lose by the increased numbers who would travel; and in case of demur a little easing in the matter of passenger duty would, in all probability, remove objections. By spending his furlough at his home the soldier would keep up his home associations, get the good word of the women, establish the popularity of the Service in his neighbourhood, and thus assist recruiting. He should also be provided with a working suit, so that in case he feels inclined to engage in work of any kind during his leave, he can do so freely and without inconvenience. This plan would save his uniform.

The working suit is badly wanted for barrack life, and if the order recently promulgated about returning worn-out clothes be persisted in it will be even more necessary.

The soldier on furlough should be permitted to wear his belts.

A sum of "bringing-in money"—say of 10*s.*, payable when the man brought had completed three months' service—might be given with advantage to soldiers on furlough, and extended to reserve men and pensioners, but withheld from civilians. Soldiers, however, should be discouraged from hanging about depôts to pick up stray recruits and claim them as their own.

Canteens.

I will now devote a few words to the very important subject of canteens, the proper management of which has a great influence on

the soldier's comfort and welfare. From the time a soldier joins the ranks until he leaves it he will at all stations, except when on active service, find a canteen at his elbow. The model canteen should be managed by a well paid steward, strictly honest, and above taking bribes either directly or indirectly. The provisions should be purchased in the cheapest market, and sold at the lowest price not entailing actual loss. The liquors should be perfectly pure of their kind. They should be so kept after being taken into stock that they should not deteriorate, and the only interest to be considered should be that of the consumer. I fear this model canteen is rarely to be found. Self-interest is allowed to obtain in each department, and so great is the custom, that little trouble is taken to have it otherwise. There are few things a soldier is more interested in than the canteens, and he is sharp enough to know when his interests are looked after or the reverse. Yet it is most difficult to get him to complain, even when he has good grounds. I recollect some years ago being appointed a member of the committee of a large canteen. I was convinced that it was badly managed; and having previously had a rather large experience in the management of canteens, I set to work to put matters right. Yet, in spite of all my efforts, I failed. Vested interests were too strong for me, and after about six weeks I was removed from the committee, my propositions being considered to be of too innovating a nature.

To take one example, I proposed to purchase our bacon at Smithfield, but was told that if we did so we should be obliged to take a ton at a time. I pointed out that our consumption was three tons a month, so that a ton at a time was not an excessive quantity; but it was of no use; I could not carry my point. Again, the committee always judged of the beer by a sample jugful brought to the committee-room at their meeting. I mentioned that our duty was to test it at the canteen bar at uncertain times, and I myself did this. I found the canteen beer, as brought to the committee, bright, sparkling, and palatable, while the tap-room beer was the reverse. I was told the men liked it so; and although the men were encouraged to complain, I don't recollect any complaints having reached us during my short tenure of office.

Monthly balance-sheets should be posted up in the barracks, so that the men may see how the profits are applied. On no one article should an undue or unnecessary profit be made. As a rule, only intoxicating drinks are sold in the canteen. It would be well to have tea and coffee there also. Hot sausages and potatoes, too, should be provided at night at as cheap a rate as possible. By attending to such things the men would be induced to spend their evenings in barracks, and the manifold temptations which beset them in the streets would be, to a great extent, taken away.

Discharged and Reserve Men.

I have so far been endeavouring to show the best methods of meeting the first two necessities of successful recruiting, viz., the obtaining of the best class of men, and keeping them happy and contented in the

ranks. I now come to the third point, namely, the duty of providing for the soldier's future when he leaves the Service or is drafted into the Reserve. So long as the fact of a man's having served in the Army is a permanent injury to his position and prospects in after life, so long will really good men be very chary of enlisting, and our numbers must be made up from the undesirable class. At present the position of the Reserve man or discharged soldier is a very unfortunate one. It is described with great truth and force by Captain White in the pamphlet to which I have already referred. He says:—

"The English Reserve man, be it remembered, has been from six to eight years away, probably a good portion of the time abroad. His training has not fitted him for any position in civil life. His place, supposing him to have had any, has long since been filled up in the social world. Boys have grown to men since he left his native town or village. The years wasted in the ranks have put him at the tail end of the procession. He is twenty-six or twenty-eight years of age. He has, generally speaking, no trade. His habits have become fairly set, and they are those of an aimless idler. He comes into a social system where the very fact of his having been a soldier is against him. He is looked upon, more or less, as a vagabond. The testimonials of his Officers are regarded with suspicion. He has to compete, wheresoever he turns, with men who have been thoroughly trained to the work he seeks, and whose personal character can be ascertained at once from former civilian employers. The few pounds in his pocket soon dwindle away, even if, as is rarely the case, they be carefully husbanded, and in the majority of instances he sinks to the lowest depths of misery, cursing the day that he ever entered the Queen's Service, and thoroughly embittered against that system of law and order, to uphold which he had given thanklessly the best years of his early manhood. He is an example to the youths with whom he associates not to do as he has done, but to avoid the Army as an unprofitable calling. And thus, instead of acting as a good recruiting agent, he, by inveighing against the Army and everything connected with soldiers, deters others from entering the ranks."

No institution has hitherto taken up the case of the Army Reserve man. The Army Pensioners' Employment Society only provides for men with pensions, and therefore less helpless than their unfortunate comrades, of whom we are treating. Moreover, the pensioner, with his one-and-twenty years' good conduct, and his pension as an evidence of it, appeals to a certain extent to the confidence of employers of labour. He is old and bronzed in the country's service, and enlists a certain amount of sympathy. The short service man has no such advantages, and consequently meets only with suspicion and distrust. The employer, desiring a permanent servant, sees a distinct disadvantage to himself in the fact that when he has trained his new *employé* to be useful he may be suddenly called away to resume his place in the ranks. While, on the other hand, the merchant or trader who only looks for daily or weekly service regards him with no favour, and at the best only classes him with the multitude of unskilled applicants for employment, with whom alone he is able to compete.

We cannot blame the employer. His experience of discharged soldiers has not probably been a pleasant one. Owing to the unsympathetic nature of our discipline, it is unfortunately true that many men, when the prospect of the guard-room and the cells is taken away, fail to exercise that self-control to which, as a reasoning power,

apart from fear, their official superiors have probably never appealed. He has, it may be, recommendations from his Commanding Officers and Captain, and means to do well. But temptation comes. The one restraining influence which has been appealed to to keep him straight no longer exists, and he goes wrong. What wonder? when, though a man in years, he has been treated throughout his Army service to a great extent as a child. This is the state of things at present, and the question—the burning question, whose glow will increase each year—is, what is to be the remedy?

Sir Donald Stewart, and those who have supported the scheme inaugurated by Colonel Chapman, have applied themselves to the solution of the difficulty by registering the names of men eligible for employment, and exerting all their energies to procure it for them. Success, however, does not lie with them, but with the British public, to whom alone the soldier who has devoted the best years of his service has a right to appeal. It is a sacred duty devolving on the Government to ensure, as far as possible, that no man suffer from having taken service under it; and no scheme, however well it may look on paper, can possibly succeed until the State recognizes its duty in the matter. Heaven knows the soldier is not over paid for his work. 38*l.* a year, 14*s.* 7½*d.* per week, according to official Returns, is the extent of his emolument, all told, as it costs the State.[1] Surely then the man who for this, less than porter's wages, spends his early manhood, and too frequently his constitution, in the service of the State, has a distinct claim for redress, if that service entails, as it too often does, permanent disadvantage.

There is only one thing to be done, and if done thoroughly, it will be the cheapest in the end. The Government must take active steps to meet the needs of the thousands of poor fellows it yearly turns out upon the world, only keeping an eye on them for its own interests—not theirs. The only plan that I can see, is for the State to give the preference, in its thousands of minor posts, to Reserve and discharged men, to urge strongly and officially the same duty on corporations and municipal bodies, and, if need be, to strengthen its action by putting aside a guarantee fund, as an incentive to employers to give to ex-soldiers, in preference to others, those humble places of trust for which they may be fitted.

The advisability and even pressing necessity of some such action was urged in a paper read by Colonel Moncrieff in January last, at this Institution, embodying the recommendations of Sir Donald Stewart and Colonel Chapman, who, however, deprecate official State action on the score of the people's vested interest in open competition for Civil Service appointments. I, on the contrary, consider that the soldier's claim is superior to any such vested interests, and that it is the paramount duty of the State to recognize that claim.

If this were done, the whole character of the British Army would soon be changed. Men would know that from the time they entered the Service they would be provided for. A better class would quickly respond to the country's call. Men having a tangible prospect in

[1] Report of Lord Airey's Committee, p. 639.

view would vie with each other in preparing themselves, by education and good conduct, for the reward which would be great in proportion to their efforts to deserve it. In this lies almost the whole gist of the recruiting question. As soon as military service presents advantages which other walks of life are wanting in, so soon will a large proportion of the best men choose it in preference to others. It has its good points already, which no mismanagement can wholly destroy, in satisfying the craving of young blood for change, excitement, and adventure; and now it only requires the sanction of respectability and a confident appeal to the reason of the fathers, as well as to the imagination of the sons of this generation, in order to raise it to its just position in the eyes of the country. A system recently established by the Inspector-General of Recruiting of keeping a register at the depôts of soldiers wishing for employment is excellent, so far as it goes, but we must go further. I would suggest that a central organization should be established in London, say at St. George's Barracks, where employers and employed could be put into communication and interviews arranged. Men might be provided with accommodation and board at a small charge. The system to be made, as far as possible, self-supporting.

Boy Enlistment.[1]

I now pass on to the important question of "boy enlistment." In 1876 a Departmental Committee devoted considerable attention to it. and recommended, amongst other things, that the complement of boys should be raised from $1\frac{1}{2}$ per cent. to 3 per cent. of the entire establishment, and that they should be enlisted from fourteen to seventeen, and at seventeen join the ranks. Most of the Committee's recommendations were, as usual, shelved, the only ones adopted being those which advocated a decrease of pay and clothing. Now it seems to me that, properly conducted, the enlistment of boys is a most valuable adjunct to the recruiting system. It is, however, spoiled by the practice of obtaining the material almost exclusively from institutions, a point on which I differ from the opinion of the Committee, who advocated a continuance of it.

I am not, of course, speaking of the military schools, but only of the ordinary charitable and reformatory asylums, which do not contain the right stamp of boys for the Army. Being mostly waifs and strays, their physique is bad, and in many cases their morals are even worse. Day after day I see boys attested for the land forces who never, to all appearance, will develop into useful men. Lads of fourteen, weighing from 60 to 70 lbs., with a height of 4 feet $5\frac{1}{2}$ inches, and chest measurement of 25 or 26 inches, are being taken. Lads of fifteen, 4 feet $8\frac{1}{2}$ inches, 28 chest, and 70 lbs. weight, are also being attested. They will never probably be fit to take their places in the ranks, and the sums expended on them will be practically wasted. In the Navy we have no difficulty in obtaining lads of fifteen with an

[1] A valuable paper on this subject was read before this Institution in April, 1875, and is published in the Journal, vol. xix, p. 399.

average height of 5 feet 1½ inches, and chest measurement of nearly 32 inches. The Army ought to be able to get the same class; but as long as it is satisfied with what it now gets it never will. The Service must be engrafted in the hearts of the people, and parents be taught to confide their children to the military authorities, with the certainty that they will not be ruined by association.

The boys now obtained have as a rule no home ties, and hang on to their regiments at all seasons, because they have nowhere else to go to. If on the contrary the Army were associated with the homes of the humbler classes, and recognized as likely to help them in their struggle for existence, the Service would in time become popular amongst them, and the ranks be rapidly filled with good stuff. The boys from the naval training ships are the best recruiters we have for the Navy, simply because they have homes wherein to spend their frequent leave. Their smart appearance and swagger have a great influence in inducing others to join. The Committee recommended that any increase in the boy establishment should be employed as tailors, shoemakers, or musicians. Now for future soldiers I do not think that boys of these trades will prove the most efficient. I would strongly recommend the increase, but alter the age of entry from fourteen to fifteen, and make it compulsory that all boys should enter the ranks at seventeen, if physically fit. I would raise the standard considerably, and especially at sixteen, and see that ages were properly verified. Only boys of proved good character should be accepted. I would also extend the sphere in the regiment in which these boys may be employed, and thus free duty men for their legitimate work. Some might be utilized for the Officers' mess, sergeants' mess, and cook-house; and others employed as writers in the orderly room, and as orderlies. They should be compelled to attend school and drill during certain hours, which might be shortened as they became proficient. As a reward for attention their pocket money might be increased. They should have regular leave, and be encouraged to spend it in their homes, where they would induce others in their neighbourhood to join, and thus, yearly, the local system would be extended on a sound basis. This system would materially reduce waste, for soldiers enlisted as boys hardly ever desert, and in most cases become exceptionally high class and respectable. Any increase in the number of boys should, however, be supernumerary to the establishment.

I have specially excepted our military schools from the condemnation which I passed on "Institutions." I feel, however, obliged to say that I have often noticed that boys from the Duke of York's School are of an inferior physique. It is difficult to assign a cause for this. It is certainly not that the boys are sons of soldiers, for barrack life is not unhealthy; married soldiers are better than the average; and the marked inferiority does not (I understand) exist at Kilmainham. The point is one which seems to call for an inquiry, similar perhaps to that which was held on Greenwich Hospital Schools a few years ago with excellent results. If the site is unsuitable for a school, there would not, I think, be any expense in

moving it, for the land at Chelsea would command a high price, more than sufficient to pay for new buildings in a better locality. If the routine of the school is in fault, or the food, the system, or anything else, it ought to be amended or altered. Possibly the boys are treated too mechanically; a system under which, as is well known, they never thrive. On these points, however, I offer no decided opinion; merely repeating, what is a very positive fact, that the boys from Chelsea are of markedly inferior physique.

Recruiting for the Royal Marines.

I will now proceed to describe the method of recruiting for the branch of the Service to which I have the honour to belong, viz., the Royal Marines, and the results we attain. The present strength of the corps is 12,405, of whom 2,536 are Marine Artillery and 9,869 Infantry, and the annual waste about 1,500. (See Appendix D.) The terms of service are 12 years with the colours, with re-engagement for an additional 9 years; nearly all the men who are permitted to do so re-engage. We have 13 Officers and a corresponding number of non-commissioned officers engaged on the recruiting service, who also recruit for the Navy. These recruiters are distributed amongst the provincial towns in Great Britain, the Officers' stations being principally at seaports. Recruits are also raised at the Divisional Head-quarters at Chatham, Portsmouth (R.M.A.), Gosport, and Plymouth, and at the General Recruiting Depôt at Walmer. Half the recruits are obtained in the London district. Owing to the territorial system and other causes, the purely country recruits are diminishing.

Although we have no reason to complain of the material we obtain, we would prefer more of the country element. In former years we drew a large proportion of our raw material from the west country; alas, from some of what were in former days our most fertile stations, we seldom get a man. So superior are the west country men that the punishments of the Plymouth Headquarters are just one half those of the other Infantry Headquarters.

Contrary to what appears to be the case with the Army, slackness of work and bad weather are unfavourable for recruiting for the Marines. A fine day in summer or autumn, when work is plentiful, is the time when we get not only the largest numbers, but also the best class of men. The Return of the increase and decrease of the corps during 1884 (Appendix F) will bear out my assertion. Whilst in the week ending 12th April only eighteen recruits were raised, the weather being, it may be recollected, bleak and cold, with the same standard of measurement, in the week ending 2nd August, the numbers were seventy. On general holidays, such as Lord Mayor's Day, Bank Holidays, and the Franchise Demonstration, recruiting is stopped, and it is absolutely necessary to withdraw the Recruiting Staff. Appendix H shows the numbers finally approved at the various stations during the year 1884; it will be observed that the number raised at Sunderland has been small, although employment has been scarce.

Recruiting in public-houses is a thing of the past; unfortunately it appears to be unavoidable in some instances that the recruiting

rendezvous should still be located in them. For the interests of recruiting, the sooner they are removed the better. Since 1882, when the Admiralty obtained suitable recruiting rooms at Westminster, and we were enabled to remove from the public-house, where the rendezvous had been established for fifty years, we have doubled the number and improved the class. The public-house landlord and my Recruiting Staff parted without regret; we were of little use to him, and he was of no use to us. Since that time the Recruiting Staff have strict orders not to enter a public-house when on duty.

Westminster was, until the last two years, the traditional locality for recruits to apply. Owing to the publicity given to St. George's Barracks by the extensive Army advertisements the recruiting focus has been removed to that neighbourhood, to the great advantage of both the Army and Marines.

With the especial view of attracting country recruits, a descriptive pamphlet is in the press, showing the conditions and advantages of the Marine service. It is to be hoped with the wide circulation through the medium of the Post Office that the additional 500 men proposed in the Estimates will be readily raised, in addition to the numbers required to supply the waste.

The Marines share with the Army what is considered the disadvantage of getting youths (professedly at seventeen years of age), but they have the great advantage of having a General Depôt.

This Depôt is situated at Walmer, where, with the splendid bracing sea air and comparative absence of temptation, the youths, having passed a stringent medical examination, rapidly develop. The General Depôt is, as it were, a manufactory for Marines. Lord Airey's Committee recommended that similar training depôts for the Army should be established. The only drawback to the efficiency of the Walmer Depôt is the shortness of the staff; only four Captains and one Adjutant are allowed for 1,600 recruits, each Captain has therefore 400 men in his company, and as correspondence absorbs most of the Adjutant's time, I fear the drill is left greatly in the hands of the sergeant-major and drill sergeants.

By carefully selecting recruits on enlistment and judicious management after enlistment, I am confident the waste may be largely reduced. As an example of what may be done, the following is a return of the avoidable waste and courts-martial at the Royal Marine Depôt for three years :—

	1882.	1883.	1884.
Bad conduct, including fraudulent enlistment ..	121	117	47
Invalided	12	29	17
Deserted	27	38	17
Courts-martial	113	159	106
Recruits joined	1,484	1,492	1,669

At the end of 1883 the Deputy Adjutant-General of Royal Marines considered the most undesirable class recruited were those over twenty-four years of age. He therefore reduced the limit of age accordingly, and at the same time stringent measures were taken to keep out undesirable characters; the result is, that not only have a better class been recruited, but the corps is and has been for the past nine months considerably above its established strength. At first there was a slight falling off, but the falling off was caused by the class we did not want, being kept out.

The total average waste of the corps is about one-eighth; from avoidable causes about one-twelfth. The large avoidable waste is principally due to invaliding. Considering the great care necessitated by the repeated and independent medical examinations as shown by the large number of medical rejections, viz., about 600 men in every 1,000 men examined, I am at a loss to understand why so many men subsequently break down. As an illustration of the stringency of the examination, I have known a Fleet Surgeon at a marine recruiting station reject 190 out of 200 candidates, many of whom had been previously passed by a civil practitioner. This is an exceptional number of rejections, although others have come close to it. It is impossible that the stringency of the medical examination on enlistment can be increased. We must therefore look for other remedies. My own idea is, that men are allowed to invalid too freely. When they get restless or dissatisfied, they take advantage of this means to leave the Service.

I will here point out the large number of the candidates for the Service who suffer from physical defects; 428 out of every 1,000 were rejected last year for the Army and 600 for the Marines; whilst the proportion of boys for the Navy was still higher. Surely this is a lamentable state of affairs. Is the English race degenerating? It would appear like it. The rejections are due to a variety of causes, some no doubt of a comparatively trivial nature, but yet such as to incapacitate a youth from being passed into the Service. Some defects are caused by pure ignorance. Varicose veins, for instance, are frequently due to the tight garters which nearly all labourers wear. Flat feet, again, are often caused by ill-made unyielding boots. I failed to detect a single case of flat feet amongst the barefooted population of a district in Ireland where I was visiting last year. Varicocele is the great defect in boys. It is much to be wished that the medical press would call attention to the causes of the Service rejections. I am convinced that much good would result.

The behaviour of Marines contrasts favourably with men of other services. About one man in a hundred is tried by court-martial afloat, and one in ten on shore, the difference being accounted for by the large powers wisely given to Captains of the Navy, which are so great that it is seldom a court-martial is necessary. Of minor offences, there is an average of one to each man embarked, and one to every two men on shore.

The Admiralty have always shown great liberality in all things connected with the barracks of Marines; and we flatter ourselves

that by the care we take of what is provided for our comfort, we show our appreciation of their liberality. The tidiness and cleanliness which a Marine acquires, in his service afloat or ashore, are so fully recognized, and his training in this respect so appreciated, that after leaving the Service he is seldom at a loss for lucrative employment. Even with us, however, the barrack-rooms are still capable of being improved.

The Marines on shore are unfortunately rationed on the Army scale, and share the same short commons to which I have previously referred. It is strange that, although being trained for service afloat, the Customs and Treasury will not sanction our being permitted even to purchase cocoa from naval stores. All convict prisons are supplied duty free; but although the issue has been approved by the Admiralty, for some unaccountable reason it cannot be obtained.

Recruiting for the Royal Navy.

The policy of the Admiralty is diametrically opposed to that of the War Office in relation to terms of service. Whilst the War Office has been doing all in its power to establish short service, the Admiralty has been equally zealous in introducing and extending long service. It will be readily seen that the difference arises out of the necessity of retaining the carefully and expensively trained seaman.

Owing to the great competition of the Merchant Service, the scarcity of English sailors, and the necessity for a higher training of men-of-war's men, it has been judged advisable to enter them all as boys. The Admiralty, therefore, on the recommendation of the Royal Commission of 1858, established training ships for that purpose. The system is expensive, as each boy costs about 75*l.* before he leaves the training ship; but the results are satisfactory.

When we carry our memory back some thirty years, and recollect what the typical blue-jacket of those days was, and compare it with what he is now, we must admit there is a vast change for the better. The old blue-jacket, no doubt, was in his way as good, if not a better sailor than his present representative; but he was an uncommonly difficult bird to catch, and when caught equally difficult to retain. We can scarcely imagine now a huge ship having to wait four months for a crew; yet such a case was not unfrequent.

The scenes on shore in my early days in the Service can now be scarcely credited. When a ship's company had leave, they made the port at which they lay too hot to hold them. They were seldom given a chance of leave, but when they were, they took every advantage of it. Drunkenness, riot, and debauchery were considered the correct thing, and once on shore, there was no getting them off again. I well recollect a line-of-battle ship to which I belonged in 1859 having to delay her sailing for ten days because 150 men (seamen and Marines) were absent without leave.

To Admiral Sir William Martin, in my opinion, belongs the credit of having regenerated the *personnel* of the Navy. Although boy training was established in 1859, it was some years before the system had any effect on the Service. It was in this interval that Sir

William Martin's admirable measures evolved reason out of rowdyism. He was appointed Commander-in-Chief of the Mediterranean Fleet in the early part of 1860, the "Marlborough" being commissioned as his flag-ship. The bulk of the crews of the ships of the large fleet on the station were bounty men, raised hurriedly during the French scare of the year before. On reaching the station a great change took place. The contrast between the behaviour of a ship's company new to the station, in their first and second general leaves, was marvellous. Having frequently been in command of the piquets which were poured on shore on such occasions, I can speak from experience. In the first instance we were as busy as we could be in sending off and locking up those who enjoyed themselves in the traditional way; in the second we had nothing to do; the old game was quite up. Even with the boy system, I doubt if matters would have mended had not the Admiral grappled with the evil. The "Marlborough's" discipline spread through the Mediterranean Fleet and the whole Navy, making the men smart and zealous afloat, teaching them to be respectful and respected ashore.

This alteration in the feeling of the country towards the man-of-war's man is the cause of the popularity of the Navy, from a recruiting point of view. Let us hope that some Army Officer in an analogous position may be found who will do for the Army what Sir William Martin did for the Navy.

Theoretically, and as a matter of sentiment, the Navy was always popular; but was more especially so with those who did not come in contact with its sailors. The blue-jackets of to-day are justly respected; and, instead of being recruited from the back slums of our naval and commercial ports, there are few villages throughout the land which has not a representative amongst them.

I recollect old Mother Wavell, landlady of what was the head-quarters of naval recruiting at Portsmouth, boasting that 67,000 blue-jackets had been raised in her house. I believe she claimed a pension from the Admiralty for her services.

I will now touch briefly on naval recruiting of the present day. It is carried on by the following agencies :—

1st. Coastguard.
2nd. Naval Reserves and Drill Ships.
3rd. Harbour and Training Ships.
4th. Marine Recruiting Staff.

The classes required to be raised are boys, from whom the seamen class are developed, and the non-seamen. At the recruiting stations boys are recruited for the naval training ships, and stokers and artificers for the general service. So successful in late years has been the recruiting of boys, that at the present time there is an excess of some 650. Some three years ago this happy state of affairs did not exist. It was found impossible to keep the numbers of boys up to the requirements, although the standard of measurement was lowered for that purpose to a most unsatisfactory and dangerous degree.

In 1882, the Admiralty determined to extend the system of advertizing the advantages of the Service; pamphlets and handbills were

largely distributed through the Post Office, with the result that the normal standard has been retained, nay, frequently raised, and yet "the cry is still they come." What has also contributed to the success is, that the Admiralty determined to take no boys whose antecedents were doubtful, recruiting Officers being held responsible for the thoroughness of the investigation. The bad boys being kept out, the good ones soon flowed in.

On the 1st of January of the current year the training ships had boys from 150 different towns and villages in the United Kingdom, counting London as one. They were raised as follows:—

From shore direct	414
„ Coastguard and other ships	392
„ Coastguard on shore	532
„ Marine Recruiting Stations	1,154
Total entered in 1884	2,492

Of which number 592 were raised in the London district.

The numbers raised in the London district since 1881 inclusive, that being the last year in which the standard was lowered, are as follows:—

	Medically examined.	Approved.	Rejected.
1881.....	762	312	450
1882.....	1,082	404	678
1883.....	1,312	547	765
1884.....	1,295	592	703
Total.....	4,451	1,855	2,596

The 1,295 boys sent forward on medical examination in 1884 represent at least 7,000 applicants. Bearing in mind that all these boys apply direct at the Admiralty Recruiting Offices, without the aid of touting, the result is most satisfactory. Now that the Admiralty have at last succeeded in obtaining suitable Headquarter recruiting premises, I believe next year the number of applicants to select from will be still greater.

Since the middle of 1882, a character or reference has been forwarded with each boy's papers; and in only one instance did it turn out to be false. I may also state that every courtesy is shown by all classes in their replies to any inquiries, and every assistance given to enable us to obtain desirable lads. I ought specially to acknowledge the assistance we receive from step-mothers.

It will be seen from the following tables not only what a fine class of boys are raised, but how they bring their fellows.

Boys raised in the London District, 1884.

Month.	Medically examined.	Approved.	Rejected.
January	255	125	130
February	107	32	75
March	108	49	59
April	153	81	72
May	67	35	32
June	35	15	20
July	73	36	37
August	82	36	46
September	179	79	100
October	103	41	62
November	76	32	44
December	57	31	26
Totals	1,295	592	703

January, April, and September are our best months, because leave is granted in all training ships in December, March, and August. No doubt both boys and their parents—without whose consent boys cannot be accepted—have frequently discussed the matter before their friend arrives from the training ship, and his good word and creditable appearance turn the scale. The measurements are equally satisfactory, as will be seen from the average measurements of the approved boys.

Boys raised in London District.

Average age, height, and chest measurement.

15 to 15½ years.			15½ to 16 years.			16 to 16½ years.		
Average age.	Average height.	Average chest.	Average age.	Average height.	Average chest.	Average age.	Average height.	Average chest.
yrs. ms.	ft. in.	ins.	yrs. ms.	ft. in.	ins.	yrs. ms.	ft. in.	ins.
15 2	5 2	32	15 8	5 2½	31½	16 2	5 4½	33
Approved 307.			Approved 226			Approved 59.		
Total 592.								
Normal standard.								
yrs.	ft. in.	ins.	yrs.	ft. in.	ins.	yrs.	ft. in.	ins.
15	5 0	30	15½ to 16	5 1	30½	16 to 16½	5 3½	32¼

Great care is taken with the medical examination, the rejections for causes which can, as a rule, only be detected by a medical man, being about 550 in every 1,000. Some years ago the percentage was still higher, and we were nearly at a deadlock, as Naval Medical Officers hesitated to pass any boy who laboured under the slightest defect, for fear that another Medical Officer, at a subsequent examination, would reject him. A system of special reference to the Admiralty in case of slight defects has been now adopted, with better results.

I may here say a few words about Institutions as regards naval recruiting. Boys from industrial schools and from the various Societies' training ships may be accepted if they meet the requirements of measurement and their antecedents are satisfactory. Industrial school boys are, however, rarely eligible. The training ship boys, on the contrary, are all that can be desired, especially the "Warspite" boys (Marine Society). I consider this is the best managed charity for training boys in the kingdom. The results are wonderful. I am informed by the Inspecting Captain of the Royal Naval Training Ships that, next to coasting boys, the "Warspite's" are the best that he gets. For healthiness and smartness they are a picture, and I see a large number of them, as all who join pass through my hands. An old "Marlborough" Officer is in command. I regret to learn that the funds of this most estimable Society have been of late years much reduced; and that there is thus great danger of a serious diminution in the scope of its operations.

The non-seamen class is still largely recruited at the home ports; but, when required, artificers and stokers are raised at the Marine Recruiting Stations. Men of a very good class are obtained as untrained stokers in the London district; and no difficulty is found in raising men of 5 ft. 6 in. and upwards, with two years' good character. Trained stokers (merchant ships' firemen) are trash; those of them, at least, who are candidates for the Navy.

The question of recruiting artificers is one which is still on an unsatisfactory footing. In a paper read in this theatre in July, 1875,[1] Rear-Admiral J. C. Wilson called attention to the great and growing excess of the numbers of non-combatants borne as part of a ship's company. Although ten years have passed since then, the evil is as great as ever. I would suggest that Marines, after being duly trained, should, when qualified, be utilized as artificers; their numbers being increased correspondingly, and their pay adjusted when thus employed. Men of the higher rating would still have to be obtained from the shore, but a large number of unskilled ones could be drawn from the Marine corps. A beginning might be made with armourers.

The behaviour of the fleet is comparatively satisfactory. The number of naval courts-martial averages 230, and I observed in the last three years, for which Returns have been rendered, in 1880, '81, '82, that no one has been tried more than once. A naval court-martial means business. The number of punishments are about one to

[1] "Journal of the Royal United Service Institution," vol. xix.

each man. The annual increase and waste in the fleet since 1871 is shown in Appendix E, also the causes of waste in Appendix G. It will be seen that, since Admiral Wilson's paper, desertion, to which he called attention, has materially decreased; it is to be hoped it will continue to decrease, as it is still very large. The waste of boys has also been reduced. It will be seen how few men ultimately leave the Navy at the end of their C.S. engagement. They are shown as gone on Return G, but are brought on again in Return E.

Naval Reserves.

Before concluding, I wish to say a few words on naval reserves. The reserves are as follows:—

Marines on shore	6,200
Coastguard	4,000
Naval Reserve	19,500
Pensioner Reserve	1,950
	31,650

This shows a very respectable total, and let us hope that if it is required it will be available. There is a reserve, however, which it appears to me we do not utilize, and one which would be most valuable; I mean the trained fighting men who have left us by purchase, invaliding, or at the expiration of ten years. I believe these men for a retaining fee of say 6*d*. a day would gladly enrol themselves, and with the machinery of the Naval Reserve Officers they might be incorporated with the Pensioner Reserve, which does not appear to be in a flourishing condition.

Our policy should be that, having once trained a man to arms, whether in Navy, Marines, or Army, we should not part with him so long as he is capable of assisting, if required, to defend the State. I would also repeat the advice of an old messmate who is now a Commodore: when a man is leaving you give him a kind word, and if possible a helping hand. Whilst many hard things may be forgotten, the last words will always be remembered, and he will speak well of you, thus assisting recruiting. If possible, a man should not be permitted to leave with an unredressed grievance, real or imaginary. When the grievance is real it should be redressed, when imaginary it can be explained away.

The Admiralty set the Army a good example in giving a preference to naval and marine pensioners in all the billets for which they are suitable. Noteworthy, for instance, are the Admiralty messengers. They compare most favourably with the messengers in the other public departments for civility, smartness, and intelligence. Pensioners, however, should not in peace time be employed in the fleet.

Now I have done. You may, perhaps, think that I have overstated some of the difficulties in the way of recruiting for the Army, as contrasted with recruiting for the Navy or the Marines. That the

difficulties do exist, cannot however, be denied, but I am convinced that with care and management, now that attention is drawn to them, many of them will disappear.

Major-General BRAY, C.B.: It seems to me, Sir, that the present is a most favourable opportunity for airing this question, seeing that we are confronted with war in almost every direction. However, I do not know that the recruits are actually required, because as I came along the streets I saw on the placards in large letters, "England ready for war. England preparing for war." I therefore presume there are plenty of men, and I hope it will prove to be so if the trial comes. As regards recruiting for the British Army, or any army enlisted on the voluntary principle, the question may easily be divided into five points. They are: first, a sufficient supply of men for the ranks; secondly, a reliable reserve to feed the fighting line; thirdly, pension for service and for length of service; fourthly, reserve services to count towards a modified pension; and fifthly, boy service under twenty not to count towards pension nor for reserve service. These are the five points of which the whole thing consists, and I will deal with each one separately. First, as regards a sufficient supply of men. During the last fourteen years the recruiting has been managed in a variety of ways. A great many orders and circulars have been issued on the subject (in fact I do not suppose any soldier knows them all), and the result is that even though England is preparing for war, we are supposed to be in an extremely bad way to meet a great war or combination of wars, that opinion being the opinion, I believe, of ninety-nine Officers out of every hundred in the British Army at the present moment. This opinion has got abroad through the published journals, and is known to every Embassy in Europe and in every place where these things are studied most carefully. Whether we have got men or not, remains *to be proved*, but we all know that for the Egyptian campaign, where a force of 20,000 or 23,000 men had to be sent into Egypt, the British regiments in England were very much drawn upon for all the best men. There have been second heavy draughts from England (and the Colonies), and the result is that I cannot suppose that the best men and most efficient soldiers in those regiments remain in their different positions in quarters in England, Ireland, and Scotland. The supply of men must always be so managed in all armies that whenever they are wanted they must be forthcoming. By the laws of conscription this is easily managed, and the men are always forthcoming, either one man or a hundred thousand, as they are required. That is a system at which the English have not arrived, though I think very soon they will arrive at it, for it is in the immediate future. But the difficulty of conscription is first the objection of the people. This exists in all countries under conscription, and in a country governed like England, by party, it is very difficult indeed for any party to propose conscription except as a *dernier ressort*. In the meantime you are obliged to get the men. We have heard to-day from Colonel Moody that boys are enlisted who are not men, that is, boys from sixteen up to twenty, and it is an open secret that these lads have broken down to that degree in the Soudan that Lord Wolseley telegraphed absolutely to the War Office not to send him any soldier who was not twenty-four years of age. Lord Wolseley is the apostle of short service—but *experientia docet*. That is what is understood by the short service system, and what was feared and expected by experienced soldiers. I think it is perfectly right to take your troops and recruits when you can get them, but though you must keep them from 17 to 20, that period must not count as man service, and until they begin their service at 20 up to 26, they should not be liable to be drafted into the Army of Reserve. The next point is a reliable reserve, and I would call that reserve reliable which can be so numerous and so well organized that it can produce its 10,000, its 20,000, or even 100,000 trained men if they are required. These numbers seem large to our eyes, but 100,000 will be required in the immediate future, if not more. Soldiers are now passed into the Reserve after six years, they get sixpence a day, and they are very glad to go when they get tired of military life. They cannot get on if they are not corporals; away they go, as they know mere colour service leads to nothing—no pension in fact. Service in the Army, in the first place, has unfitted a great

many of them for civil life, if they ever were intended for it, and at the end of six years they do not find permanent berths and occupations in sufficient numbers; the consequence is that these men, hundreds of them, starve all over the country, and they act as an advertisement in the streets and public-houses—as an argument against enlisting in the British Army. Surely that should not be. The soldier should be, as he is in all other countries, an honoured man, a man following an honourable profession, and so far from acting as an advertisement to advise young men not to enlist, he should be distinctly the reverse. There are two things that are distinctly required to raise the position of the soldier. The first is, whether you choose to take him for six or twelve years with the colours, he must have a pension. That is the foundation from which he must start. Every man who enters the Army or Navy must know that if he chooses to remain to the end of a certain time, he will have a pension to look forward to. That was the recommendation of Lord Airey's Commission, which was composed of Officers of different branches of the Service, men thoroughly accustomed to the subject they had to deal with, and they made those recommendations under the knowledge that it was impossible to get such men as they required in a voluntary army without having a pension behind them to look forward to. Then as regards the Reserve service. A man goes into the Reserve for six years, and at the end of that time it is twelve years. He has nothing—neither pay, pension, nor profession. That ought not to be. If a man goes into the Reserve up to a certain age, he ought to be always under the hands of the Government to be called upon in the event of war. I think the period should be increased to 12 years, which, with the 6 years' active service, would make 18 years altogether; but then that man ought to have a pension if he remains 12 years in the Reserve. It should not be quite the same pension as a soldier would receive who serves in the ranks for 21 years, but at the end of 6 years with the colours, and 12 or 15 with the Reserve, a man ought to have a modified pension, and if that were the case, these men would be always available for war, and when you wanted to call up a larger number of men you could call upon them, and you would get them. Now about the boy service; I say that that should not count towards pension nor for reserve. There is one other important matter. I have noticed that in all other countries in Europe the soldiers and sailors are taken for hundreds of offices under the Crown in preference to civilians who have not done service to the State. Everybody hears that suggested in England, but why is it not acted upon? Surely those men who do service in the field ought to be taken into Government employment in preference to fellows from the streets, who have done nothing except ask for the appointment, and get it! It is simply because it is the remnant of the party system under which you have been governed, and in olden days the party in power used to get all the spoil, and it was divided amongst them even down to the smallest post under the Crown. Of course that is not so now, for as we know a great many of those posts are lost to the Crown and go by competition; but still there are a great number of them that are not so, and I consider it the duty of any Government, especially a Government that has a voluntary army, to give soldiers positions in their gift under the Crown in preference to any civilian outsiders who have not done service to the Crown. I cannot leave this subject without pointing out one thing which will add to the recruiting of the British Army in bringing forward the old stamp of soldiers, and that is restoring the regimental numbers. I do not care how it is done, but it *must* be done. I believe almost every man in this room, reading those dispatches from the Soudan has read, as I have done, with astonishment and dismay, "Captain This-and-that of the Muddlesex or the Diddlesex Regiment has been killed or wounded," and I absolutely do not know what regiment he belongs to, and I find I cannot get anybody to tell me unless I ask for an Army List; that ought not to be. This system was taken from the Russians and the Prussians, and like everything that you take from them or from anybody else, you take it upside down and wrong side first. A Russian regiment is called a Regiment of the Baltic, or the Azoff Regiment, No. 49, a Regiment of St. Petersburg, No. 54, and that regiment is spoken of in ordinary conversation not as the Regiment of Azoff or of St. Petersburg, but as the 49th or 54th amongst the men themselves. In the Prussian Army you have the Brandenburg

Regiment, called the 94th; the Hanover Regiment, numbered 88th. Now the soldiers never put the number last; they always put it first, and that will have to be done again in the British Army. It is distinctly engraved on the hearts of English soldiers that for two centuries their regiments have fought under certain cherished and honoured numbers, and not under those absurd and unmanageable county titles. That *must* be changed. There is another question regarding the recruiting of the Army, which I think is a very important social question. That is, that by Act of Parliament, all soldiers and Officers in uniform should be admitted at half-price into every place of public amusement throughout the kingdom; it should be the soldier's right. I do not suppose that the Officers would go in uniform, but I am speaking of the soldiers. Soldiers in all parts of the world go to places of amusement, and no man dares to ask them for more than half the entrance money, while in many cases they get in free. Why is this? It is because the soldier is not considered an objection; on the contrary, even a private soldier is considered a decoration to these places. That is another point that you have got to insist upon in the interests of the soldiers whom you have commanded, and whom you do now command. It *must* be done, and it *can* be done. It only needs a simple Act of Parliament. Why is it not done? It is because the Government of the country is a party Government, and the moment they did so, there would be an outcry on the part of theatre managers and other interested trades that the Liberals in power had taken away a part of their business. The result is that a Government are afraid of pressure of that kind, and would withdraw from any such proposal. However, that feeling must be done away with, and the Army must be put into its proper position socially, not only with regard to the privates, but also to the Officers. Then again, why should Officers' sons have to pay 800*l.* or 900*l.* in order to qualify for these competitive examinations in order to get commissions? They are obliged now to compete with people who have never had a son, or a nephew, or a father, or a grandfather in the Army, and those men have more money in their pockets, and they are able to give their sons a better education in colleges and schools, while the poor Officer cannot afford to do so, and the consequence is that the sons of Officers are beaten in every direction. What happens? The fathers suffer—the fathers are ruined. I have known several Officers who have paid 800*l.* or 900*l.* in order to try and force their sons through. Those sons have made large numbers of marks—quite enough to qualify any young gentleman to be an Officer—and yet they have failed to get excessive and unnecessarily high marks. That would not be done in Prussia, the country which you are so fond of copying. It would not be done in Russia, nor in France. In fact, it would not be done anywhere except in this country, where as I say they take anything wrong-side, up-side, hind-side, down-side. I do not say that Officers' sons should not qualify for commissions. They are quite as able as any other young gentlemen to do so, but I think the fact of being the son of an Officer of the Army or Navy ought to give him a start, that is to say, he ought to have a thousand or fifteen hundred marks added to whatever marks he had gained at the end of the examination, or there should be qualifying marks for Officers' sons: that is the way in which to reward Officers for their services. In the olden days, the sons of Officers, Colonels, and Generals were certain to have a commission: that was one of the rewards for serving in the British Army; but that has now been taken away, and not only that, but they have put such obstructions in the way, that unless you have your pockets full of money you cannot get your sons into the Army at all. That is one of the things that ought to be altered in favour of the sons of men who have given their lives to the service of the country. I speak in favour of Officers' sons, as it is a part of the question of recruiting—the recruit Officers of the Army. In conclusion, I hope this open and interesting discussion will lead to a reconsideration of the whole question of "Recruiting and Short Service" in the interests both of the Army and the country.

General ALEXANDER, R.M.: I wish to make a few remarks with regard to what has been so strongly insisted upon in the valuable paper we have just heard, with respect to the advantages to be derived from men of good character only being enlisted for the Army. Of course, that is a point upon which we must all be agreed. But even if it were possible—and I do not think it would be found possible for the Army at large,

although it might be so, for a comparatively small and favourite service like the Marines—would it not be found after a time that a certain number of these young men would have become from various causes "bad characters?" And it is with regard to these bad characters that I wish to say a few words. I think it is the experience of most Officers that there are many men who although at times very troublesome and badly behaved in garrison, have often proved themselves to be good and courageous soldiers in the field, and in turning them out (which has been a very favourite mode of dealing with these men, much advocated of late years) it seems to me that we not only get rid of trained soldiers, and replace them in many cases by recruits of whose character we know nothing, but we do a great injury to discipline, inasmuch as these men become as it were the apostles of misconduct amongst all the young men with whom they mix. They are able to point out that in the Army a man who joins without money may after a certain time should he get tired of soldiering, obtain his discharge for nothing as a "bad character," whereas as a "good character" he could only do so by paying a large sum of money. The consequence is a number of young men are induced to follow their example, and seek to escape from the restraints of military discipline by a persistent course of misconduct. I have had some practical experience on this point; for some years ago, on assuming the command of the Royal Marine Artillery, I was so strongly impressed with the fact that whenever men were discharged for bad conduct (and it frequently happened that men were sent from the fleet to be discharged as useless or objectionable characters) there was almost invariably an outbreak of misconduct amongst the young soldiers, that I asked the Admiralty for permission to keep all these bad characters at headquarters, and undertook in the event of blank discharges for misconduct being discontinued, to so arrange the sea-service roster that no second class men or irregular characters should be embarked. This request was acceded to, although it was reported against on the grounds that in a short time I should have nothing but a residuum of bad characters left at headquarters. The result, however, was that at the end of a year we had had fewer courts-martial, fewer men under punishment, and far less crime, than before, or than at any of the Marine Divisions—including the Plymouth Division, which we have heard spoken of in such favourable terms—and moreover there were out of some eighteen hundred men then on shore only thirteen remaining who had been taken off the sea-service roster, and the conduct of every one of these men, including that of those who were supposed to be incorrigible, was steadily improving. The success of the experiment far exceeded my expectations. It is not difficult to explain the cause of this. Under the old system, the man who was "going in" for a blank discharge was a swaggering fellow who obtained great influence over the younger soldiers, by persuading them that he was a fine fellow, and that the best thing they could do was follow his example; but under the new system they became poor creatures always under punishment who were looked upon by their comrades with pity and contempt. The change was so marked that the impression was created that there must have been some unusual leniency in the punishments to account for it, and one day the defaulters' books from all the divisions were ordered up to town for inspection, when it was seen that I had made it a rule never to let a man off a deserved punishment. Of course I would make an exception of men who have been guilty of crimes for which they have been sentenced to some very heavy punishment such as penal servitude; but in every other case I consider that the discharge of bad characters is one of the very best means for creating bad characters. I have had another experience; with regard to the so-called "fraudulent enlistment." Sometimes a man who had got out of temper with the Service in some shape or form would come forward and say, "I am a fraudulent enlistment." Under the old system he was sent before a magistrate who gave him a few weeks' imprisonment, and he got free. Amongst these men were often good and well-trained soldiers, whose places had to be filled by raw recruits, of whose antecedents nothing whatever was known. I have often gone into a prison as a visiting magistrate, and have found the kitchen in splendid order, with a man standing up in it ready for the approbation he was sure to receive, who when asked what he was in prison for, was almost certain to answer "fraudulent enlistment;" I daresay a troublesome fellow but with a physique and bearing that would make him a valuable addition in such positions as our Army has been in

lately; and I must say that although the idea of having an army full of men of good character is very fascinating, yet have we any right to expect that the Army will ever be anything but a reflex of the classes of society from which it is drawn? If the men of those classes generally happen to hold a high average of character, the men in the Army will have a like character. And it would be as well to remember that it is a bad regiment that makes bad soldiers, for experience teaches us, whether in a regiment or a ship, it is the Commanding Officer who is responsible for its discipline, and so it is that very often these men become bad characters because they have been made so by the system under which they have been trained. But whatever the mode of dealing with men after they have enlisted may be, if you require men of good character to pay a large sum of money, and that only as a favour, to obtain their discharge, it does seem utterly inconsistent and illogical that bad men should obtain the same privileges for nothing, or a man who declares himself a "fraudulent enlistment" after a short time in prison, where he is usually treated with a certain degree of indulgence. Were we to be less illogical, we should avoid many of the difficulties and complications which now stand in the way of what is the first requirement of all armies—good discipline.

Professor LAUGHTON, R.N.: In a meeting like this, consisting to such a large extent of Army Officers, it is almost presumptuous for me to rise to make any remarks; but there were some points which Colonel Moody touched on that seem to me to admit of illustration from one who has considered the question from the outside. The lecturer spoke at some length of the feeling against the Army amongst our lower classes, and of the difficulties which this puts in the way of recruiting; and he compared this with the very opposite feeling which now exists towards the Navy. It is, however, not so very many years since the two Services were very much on a par with regard to the popular feeling: the lower classes were profoundly suspicious of both, and disliked both. That seems to have been got over now, as far as the Navy is concerned; but in the case of the Army it remains as strong as ever. I think that there can be very little doubt that that feeling, to a great extent at least, originated in the fact, to which Colonel Moody has referred, that the two Services were the sink of the nation. Through the greater part of the last century and at the beginning of this century, when men were wanted for either Service, the ranks were filled up from the nearest prison. If a ship touched at a country place, the magistrates jumped at the chance of getting rid of the bad characters of the neighbourhood, and sent them all on board. I may mention one case which happened towards the end of the last century. A sloop of war put into Pembroke: a murder had lately been committed, and the murderer could not be discovered. No one in particular was suspected; so the local magistrates laid hands on some two dozen well-known and notorious ruffians and sent them on board the sloop, with a request that they might be taken proper care of. Of course, when our ships were manned in this way the discipline was excessively harsh, and the punishments severe. "Starting," that is, irregularly thrashing the men, was a recognized custom; the only limitation was that the sticks used must not be too thick; but anything not thicker than a broom-stick seems to have been approved of. The thief's cat was by no means set apart for a thief's back; in many ships it was considered an indispensable aid to the maintenance of good order. Now that criminals, blackguards, and roughs are kept out of our ships, a milder rule prevails, and the working classes are no longer terrified by the once familiar stories of brutal cruelty. But long after our men had ceased to be raised from the dregs of the population, the tradition remained; and a blue-jacket on leave would have been almost degraded in the eyes of his fellows if he did not behave like a drunken blackguard, or if he came off to his leave. The present system of training our men from their boyhood has unquestionably been the principal cause of the improved tone now existing; but the neck of the old system of rowdyism was—as Colonel Moody has said—broken by Sir William Martin, when he was Commander-in-Chief in the Mediterranean. I myself was serving in the Mediterranean fleet at the time to which Colonel Moody has referred, and saw a great deal of Malta; and I can distinctly remember the very curious difference that was noticeable, as he has pointed out, in the state of the town when a ship was giving her first leave and when she was giving her second. I was some little time afterwards a messmate of Captain

Pellew, who had been Sir William Martin's Flag Lieutenant; and he used to describe his office as by no means always a pleasant one; for part of his duty was to apprehend and hand over to the piquet any man whom Sir William Martin happened to see taking up more than his proper share of the pavement, or whose neck-handkerchief was missing, or who exhibited other signs of having been imbibing too freely. Personally, Captain Pellew used to say, he would much rather have left such a man to take his chance of falling in the way of the piquet; but the point which Sir William Martin insisted on was, that a liberty-man should not be at liberty to make a nuisance of himself. Now, the old traditional rowdyism having been stamped out, our discipline humanized, and our men entered as boys of good character, the Navy has lost all the "Reformatory" element which Colonel Moody has so rightly condemned. And, judging from the figures before us, the physical results are admirable. We get boys now of good character, under the sanction of their parents, and recommended by the clergymen of their parish; and the result is that we get boys under fifteen of 32 inches chest measurement. The Army, on the other hand, takes the waifs and strays from the reformatories, gutter children in fact, and the result is a chest measurement of 25 inches. I happened the other day to be looking over some of the Returns of military enlistment, and I found that recruits of 21 or 22 years of age and 33 inches chest measurement were being attested. What are we to call such creatures? From their age, they are not boys; but from their growth they are certainly not men. But this deplorable state of things can be put a stop to, and ought to be put a stop to. Creatures of 33 inches chest measurement are good for nothing but to choke the hospitals and the prisons. It can be stopped. We have stamped it out in the Navy. I remember an ordinary seaman drafted on board a ship I belonged to twenty years ago, who weighed 70 lbs. He was at once discharged as useless trash; but the fact remains. Twenty years ago we were liable to be infested by such. What the Navy has done the Army can do if it likes. But it is not only in the lower classes that the adverse feeling is to be found towards the Army. Probably many here may remember a case that occurred some ten years ago, of a poor woman going before a magistrate in London, Sir Robert Carden, I think, and complaining that her son, who was a letter-carrier, had enlisted. She thought it was rather hard, as he was a servant of the Crown already, and begged that his enlistment might be cancelled. The magistrate said he could not do that; but he had the young fellow up before him and slanged him in unmeasured language, telling him he ought to be ashamed of himself bringing his mother to tears, a disgrace to his family and relations. It is difficult to conceive anything more calculated to bring the Army into disrepute. In another case, that also happened a few years ago, the Adjutant of, I think, one of the regiments of the Guards, wrote a circular letter to some of the clergymen throughout Surrey and Sussex, asking them to do what they could to get young fellows from their parishes to enlist. One particular clergyman (many here will no doubt remember it) wrote a most violent letter to the papers, saying, "Who were the Guards? Why should clergymen be insulted in that way, and asked to heap infamy on the heads of their parishioners by persuading them to join the Army? It was the last thing he should do; on the contrary, he would do all he could to hinder them enlisting." Country clergymen have a great deal of power, and might be most valuable aids to recruiting; but they must be first of all convinced that sending a young man into the Army is not sending him to his damnation. Colonel Moody, from the limits of his subject, has not been able to touch on general enlistment for the Navy, but has confined himself solely to the boys, with whom he is immediately connected. Theoretically, the Navy, even now, does enlist also men for short service; but the difficulties in the way have been found so great, and the organization so imperfect, that the short service enlistment is practically unknown. There are, I believe, something like twenty men entered in a year. I think that is a very great pity; because there is a very large number of boatmen, fishermen, and so forth, round our coasts; and if these men could be induced to enter for two years, three years, or a ship's commission, and undergo the man-of-war training, then as they passed into the Reserve they could help to form a Reserve in fact as well as in name. We have at present some 19,000 in the Reserve; many of them may be very good sailors, but few of them have any idea of man-of-war discipline, and if in time of emergency they

should be called out and sent in considerable numbers on board a man-of-war for the first time, the men would be very much adrift, and the ship would be, for some time, very far from efficient. I should like to see it ordered that no man was to be enrolled in the Reserve who had not served for at least three years on board a man-of-war. It is, I fear, digressing from the subject immediately before us, but I feel compelled to say that I should like to see the same rules applied to the Officers; and that no officer of the merchant service should get a commission in the Naval Reserve unless he also had served for three years in the Navy. I am convinced that such a rule would act most beneficially both on the Queen's and on the merchant Service.

Admiral GORE JONES: My excuse for saying a few words on this lecture, more especially about the second part of it, the boys, is that I was once Inspector of Training Ships for between three and four years, from 1873 to 1877. I would therefore like to make a few observations on something that has fallen from the gallant Colonel who has given us this most interesting lecture, and to do so I will follow his paragraphs down. He first says, "The policy of the Admiralty is diametrically opposed to that of the War Office in relation to terms of service." So far that we have men entered for long service, it is so, and a very good thing it is too. He then goes on, "Owing to the great competition of the merchant service, the scarcity of English sailors, and the necessity for a higher training of men-of-war's men, it has been judged advisable to enter them all as boys." Nobody in the shape of a seaman could be instructed to fulfil all the various engagements required on board a man-of-war without having been brought up as a boy. There is an old observation why sailors differ from almost every other class of society, and it rests entirely on this, that the sailor is educated *by* his profession, while all other people are educated *for* their profession, and it makes a vast difference in the character of the men. Everybody knows that one sailor is pretty much like another; it all arises from the training on board ship, and being all his life in the free sea air and from all the ideas attached to the sea. But now-a-days he has got to be a learned man; he has got to have an education in gunnery, small arms, torpedoes, and all the et ceteras of a man-of-war; therefore, unless a man is educated from a boy he will never be a successful man-of-war's man. And it is here that I differ altogether from the gentleman who last spoke, for I do not think that we could get very much assistance either from fishermen or anybody else. Colonel Moody speaks of thirty years ago, and recollects the blue-jacket of those days. Well, I can add to that I recollect the first ship I went to sea in, the "Formidable," in 1841. We were exactly nine months before we got our ship's company, and the first time we mustered our watch at sea one of the most laughable incidents occurred that I ever recollect on board ship. The first thing the Officer of the watch did when he saw them turn out with long tails, chokers, and all that sort of thing, was to send for the barber, and all these tails were sheared off, so as to make them look something like sailors' jackets. Really and truly we only had eighty seamen on board that ship, a man-of-war of 84 guns and 750 men, and those we got from the "Powerful," which had been paid off a few days before we were commissioned; the rest were all landsmen. Colonel Moody then makes some remarks with regard to Admiral Sir William Martin. The only thing I have to say on that is that Sir William Martin was the only schoolmaster that we have had of late years in the Navy. His school exists to this day, and Officers who have served under him are proud of his teaching. He was a very severe man, but he was the right man in the right place, and we have had no school since. I quite agree as to the good that he produced at Malta, and no doubt the Officer who was in charge of the piquets had much pleasure in finding his disagreeable work lessened. Now we come to the actual recruiting of boys. While I was at the head of the training service we had a greater recruiting agent than any of these mentioned here. When boys came off and were accepted they very often had very good clothes on. We used to have those clothes taken off, mended, cleaned, and sent back to the mothers. The mothers said, "What a good thing it is to send Billy to sea; here he has sent me these clothes, and they will do for Jackie." So far that had a great effect. And when the boys had completed their year in the training service I always saw their money. I said, "How much money have you got?" "Thirty shillings, Sir." "Well, now," I said, "send that

to your mother, you do not want it;" and off went the thirty shillings to the mother. All the recruiting was carried on through those mothers. They all went and told their gossips what a good thing it was to get into the Navy, and the consequence was I could have raised 8,000 boys in a year without the slightest difficulty. How it came to be reduced to a smaller number I do not know, for I could have raised thousands of boys. However, recruiting now seems to be revived again, and there is an excess. Different Officers have different ideas, and I was succeeded by a man in the training service, a very distinguished Officer, but his ideas and mine were totally different. He went to the Channel with a squadron of brigs, and these wretched boys, perfectly unfitted to go into ships, were kept on deck in the cold nights keeping watches, many of them without any monkey jackets, and the consequence was the brigs came into harbour with so much sickness on board that I think one of them sent some fifty to the hospital. This discouraged everybody else, and there was a falling off perhaps then, but there certainly was none before. Colonel Moody had the recruiting of boys, but I not only had the recruiting, I also had to do with the training of boys afterwards. A great many things occurred there which ought to be guarded against and counteracted. A great many boys came into the Navy with the object of getting a cheap education and then leaving the Service: others, again, came to the determination of leaving the Service by bad conduct. We had to act against both of these. I have seen them at Falmouth go and take a lot of boots and run away with them in order that they might get arrested and put in charge of the police, and then they thought we would not have them back. At Plymouth a fine boy, whom I had a great opinion of, came to give notice that he would like to leave, and was backed up by the then Superintendent of the Dockyard, who said that his father intended the boy for better things, that he only wanted the boy to get the education which was given free by the country, and then to leave and do better. That is to a certain extent the system at Greenwich, and it is a very bad one. No boy ought to be allowed to be educated at the public expense except for the Army or the Navy. I objected to this, and although the Admiral wanted very much to make an exception in favour of this young man, I carried my point. Another rule that I made was that no *bad* conduct was allowed to gain what good conduct could not gain, and the consequence was we kept the badly-conducted boys. I had no end of letters from the Admiralty stating that boys that had been sent ought to have been discharged long ago. They thought so, but I acted for the good of the Service, and these boys, finding that neither bad conduct nor good conduct would get them out of the Service when once they were in it, had to stop, and soon settled down. In all these things of course judgment goes a long way, and as far as desertion went I know our desertion at that time was 1 or 2 per cent. at the outside. We used the telegraph very frequently, and knew exactly where to send. The consequence was a boy never left a ship but we had him on board again within a few hours, and that I am sure is the most effective way of stopping desertion. I hope the Admiralty will stick to the recruiting for the boys, and the boys only, through thick and thin, and take no other men of any sort or kind. They are the finest body of men, I venture to say, that we have under the Crown at this moment, and it would be a great pity to destroy their *morale* in any way by recruiting from the merchant navy.

Admiral HAMILTON: I did not intend to take part in this discussion, except for a remark that has fallen from General Alexander, namely, that the punishment returns were a criterion of the discipline of a ship or a regiment, or of the capacity of the Officer commanding. I differ from that opinion *in toto*. I myself have commanded two ships of precisely the same class, with the same number of men, and in one ship the punishment returns were fourfold that of the other; not that there was any difference in me or in the system of the ship, but in the one case we had a set of blackguards to deal with, and in the other a very good set of men indeed. It is an idea that has led to a great deal of harm. Officers try to curry favour with the authorities by having a low scale of punishment. There is no body of men that would probably illustrate that more forcibly than the Marines themselves, and our lecturer, who I saw rather applauded the remark, has himself exposed the fallacy of it by showing that the punishment in the Marine Division at Plymouth is much less than that in any other division, owing to the better

quality of men got there. The Officers were the same, the system was the same, but the men were different.

Wednesday, April 1, 1885.

Major-General Sir ANDREW CLARKE, K.C.M.G., in the Chair.

Adjourned Discussion.

Colonel Evelyn, 3rd Battalion East Surrey Regiment: It appears to me, Sir, that the constant changes which have taken place during the last twenty years in the periods of enlistment have resulted in proving that no change was necessary, but that short service is utterly inapplicable to colonial service. The terms of ten years for infantry and twelve years for cavalry, as arranged by the Act of 1847, were the best and most suitable to the British Army. When the Franco-Prussian war took place the rapid and wonderful success of the German Army excited great interest in this country, and led to the adoption—perhaps precipitate adoption—of everything Prussian. We are even to this day obliged to wear German spikes on the tops of our hats, and we narrowly escaped the infliction of the Prussian infantry boot, which so galls the feet that the soldiers are obliged to wrap them in cloths, and by the use of which the Prussian Army is reported to have lost the services of 40,000 men during that campaign. If such things as these were to be imitated, we could not escape the introduction of the grand Prussian system of short service and Landwehr or Reserve, which was adopted by us without considering the material differences in the conditions of our Service and that of the Prussians. They have no Colonies as we have. However, the thing has been done, and constant changes have taken place since the Franco-Prussian war, but those changes have not been satisfactory. Sir Lumley Graham pointed out that the sixteen essayists who lately contended for the Gold Medal of this Institution, as well as the referees who adjudged that Gold Medal, were all agreed that short service was incompatible with the conditions of an Indian Army—though perhaps it was necessary for a Home Army. Now, that seems distinctly to lead to the inference that two descriptions of forces are necessary in this country—a Foreign Service Army and a Home Army, an Army capable of defending our hearths, and supporting the Army when engaged in active service in the field. I think it must be remembered that to an Army required only to defend a country from invasion, or only to take part in defensive operations—active or passive—the system of conscription may be fairly and constitutionally applied. Ever since the Anglo-Saxon times, the right of the country to the services of every man for home defence has been acknowledged and recognized. But the power of Saxon, Norman, Tudor, and Stuart Kings to press men for service abroad—service for dynastic or other wars—in which the immediate safety of the country was not concerned, has never been recognized. It has always been opposed, and sometimes it has been opposed with very great vigour. Now for the active Army. I believe, from what I have heard many Officers say, there is a strong conviction that the ten years should be the shortest period of engagement for infantry, and twelve years for cavalry, in a Foreign Service Army. I know I shall be met at once by the objection, "Oh, it is all very well, but we cannot get the men; we cannot get recruits to accept long service!" Now, I do not believe a word of this. It is true that under the system of ten years' service we should not get so many recruits as we do now under the preposterous optional system; but, on the other hand, we should not require half as many, and we should get an army of men instead of an army of boys. Soldiers are always fond of change, and if a man, after three years' service, is given, as at present, the option of discharge, nine out of ten will accept it for the sake of change—particularly if they have to receive deferred pay. I believe the only branch of our regular Service to which a short period is in any degree applicable is the Guards, who never do Indian or Colonial service, and never go abroad except during war. At the end of service I believe a man ought to receive his discharge—if he wants it, but he should have the option, if a good man, of continuing to serve for a pension, or to join the Reserve. His period of service should be prolonged in either case. In

the Reserve he should receive a small annual or daily payment, and should be attached to a Militia regiment, and trained annually with it. There is no reason why every Militia regiment should not have two trainings, if necessary, in the year —one for Reserve men and one for their own men. Just as one huntsman may hunt alternately two packs of hounds, so with a staff of Militia Officers and sergeants, assisted by Officers from the brigade centres, there is no reason why they should not have two monthly trainings if required—one after the other. I think it is very important that a man on the Reserve should come up for training every year —should go through a certain course of drill and musketry to make him available, and keep him up to the mark! I think that is the best system in which a Reserve—if we are to have a Reserve—should be arranged. Now as to the Home Army; there are two truths which should be admitted. I believe they are not capable of being doubted. First of all it is not necessary, as far as infantry is concerned, that we, to be efficient, should be constantly under arms; and I think it is equally certain that the country never could stand the enormous expense of keeping on constant pay the number of men required to ensure our safety. Now, then, if it be allowed that for a Home Army we want men with short service and intermittent service—that is to say, to be allowed to go home during a portion of the year without pay—it seems to me that we have in the Militia exactly the description of force required. I believe the Militia to be capable of enormous development. The extreme importance of it is hardly recognized in this country. Call it Militia, or call it by what name you will, it is in its essence a Home Service Army, and, as such, I do not see any necessity for any great change in our system in order to get what we want. Not only is the Militia a Home Service Army, but it is competent to support an army on active service, by supplying it with a constant stream—not of boy recruits, but of well-trained, disciplined, and seasoned soldiers. The military service has never been very popular in this country, because it entails expatriation, and the monotony of barrack life. It is not that Englishmen object to a bit of soldiering, or a bit of fighting—and we can get any number of men if we can only avoid the drudgery of continuous service or prolonged expatriation in times of peace. And if we do not want that, does not the Militia, or would not the Militia, properly developed, meet our requirements exactly? Having been in this force ever since I left the regular Army—I may say thirty years—during almost the whole of which time I have commanded a regiment, I have some right to speak, and if I had time now I think I should show gentlemen present that the management of the Militia, ever since its reconstitution in 1853, has been one long course of mistakes, mismanagement, neglect, and injustice. However, I should have to inflict a paper on the subject even to trace slightly the course of events since the year 1853. If the Militia, or whatever it may be called, the Home Army, is to have an organization, and is to be managed properly, depend upon it the Officers of experience in it must sometimes be consulted, and that they must have a voice in the administration and command, and not be shelved as they are at present. The Militia has been completely lowered and snubbed in every possible way—especially by War Office and Horse Guards officials, who have had no experience in the Force, and who cannot know its peculiarities. I could relate some very striking instances of their utter ignorance of the legal status and constitution of the Militia which I have found at the War Office and among Officers of high rank—they know nothing about it, and they have mismanaged it terribly. With the exception of Colonel Stanley, there has been no one at the War Office who had any connection whatever with the Militia. That will have to be altered if the Militia is to be—as it ought to be—the main stem of the military force! It therefore appears to me that recruiting should be based on the following simple principles:—1. Enlist men for the active Army for as long periods as possible, and as they are likely to remain fit for service. 2. Never tempt a man to join the Reserve if engaged and fit to remain with the colours. 3. Every man in the Reserve should go through an annual training to keep him up to the mark. 4. Make the Militia the Home Army, and incorporate into it the Army Reserve. 5. Encourage men to pass from the Home Army into the Foreign Service Army, but do not degrade the Militia into a recruiting establishment for the Line. 6. Let Officers of experience in the Militia have a voice in its administration.

Lieutenant-Colonel C. F. COLVILE: Although I have been studying military questions now for about twenty-eight years, I must confess I have never yet been able to grasp the principles which govern our organization and recruiting. We seem to have a most extraordinary knack, in dealing with military matters, of taking hold of the dirty end of the stick. Instead of working down from our military requirements to our recruit, we work from our recruit up to our military requirements! What we do at the present time appears to be this: We send recruiting agents into the country one day to catch whitebait, another day to catch sprats, another day to catch herrings, and, in order to gull the British taxpayer, we call them all fish. Or, in other words, one day we recruit boys, another day hobbledehoys, and another day we recruit men, and, in order to gull the British public, we call them all soldiers. And in order to catch these soldiers our conditions of service and terms of enlistment are constantly being changed. It therefore stands to reason that our organization must be constantly varying, and if our organization is constantly varying in order to meet the difficulties of service, how is it possible effectively, economically, or efficiently to meet our military requirements all over the world. I maintain, with all respect, the proper way to do it would be this: that we should first settle definitely and decidedly what our Imperial requirements are, and that question should be settled by leading military men and statesmen in conjunction. Having settled that important point, we should then determine upon what organization will best meet those military requirements, and that I submit should be settled by soldiers alone, without even allowing a whisper to be heard from civilian clerks in the War Office. And having settled upon our organization and our military requirements, we should then settle what conditions of service and what terms of enlistment will best meet that organization, and that question, too, should be settled by military men alone. Having settled these three important points, we should go to the labour market and say, "Now, then, enlist on these terms." If the men are not forthcoming, you must raise the price until they are. It is simply a case of pounds, shillings, and pence. But to alter your terms of enlistment and conditions of service in order to catch men is no principle at all. You may say the country will never consent to pay the price. I say they would; that if you could only get a Government firm enough—a hopeless thing I am afraid at the present time—to put their foot down and say to dinner-eating city aldermen and other money-making city men, "Look here, you won't fight yourselves, you won't have conscription; we won't be responsible for the integrity of the British Empire unless we have an Army on the conditions we lay down, and you must pay the piper," and they would do it. Of course, in addition to paying well, you must make the Service popular, and I can conceive nothing that would conduce to make the Service popular so much as abolishing the present ridiculous, childish territorial titles and restoring the old regimental numbers. The question of regimental numbers reminds me of one other matter, to which I would just call your attention, and that is the calling up the Reserves. When last the Reserves were mobilized, I held a staff appointment as Brigade-Major, and all men coming up to the Reserves in a certain district reported themselves to me for disposal. With hardly any exception the men all said to me, "Please, Sir, can I go back to my old regiment?" I said, "I am afraid you must go wherever you are ordered." I can assure you the disappointment and grumbling was general and universal. The Reserves are now being called up, or part of them, and my own impression is that having found out that they are not to go back to their old regiments, and that they are to be pitchforked here, there, and everywhere, to do any work that is required of them, they will not respond in the unanimous and cordial way in which they did on the last occasion. That is my impression, though I may be wrong—I hope I am. I take it that there is not much difference of opinion amongst Officers, non-commissioned officers, and men in these matters, and although I do not wish in the least to be egotistical, I will mention one fact which bears on the subject. About three weeks ago I received a letter from the Adjutant-General's Department asking if I was desirous of performing duty with the East Kent Regiment. "East Kent Regiment!" I said to myself, "Good gracious! what is that? I never heard of it—I do not know it. Is it a cavalry regiment or an infantry regiment? Is it a Militia or Yeomanry regiment? Is it part of the Corps of Commissionaires, or is it part of the London Fire Brigade?" Well, I could not

answer the question, and, as I could only perform duty there at great inconvenience and pecuniary sacrifice to myself, I requested to be excused. But I can say this—had I been asked to do duty with either the 54th or the 11th Foot—both of which dear old regiments I served in over eleven years—I would have walked all the way and served for nothing. I maintain that the same spirit that animated me in these special circumstances animates non-commissioned officers and men, and if you wish to get men to do their duty, and to extract the maximum amount of good out of them, you must treat them as if they had feelings, and not as if they were machines and were simply like rifles—interchangeable in all their parts. Of this I am certain, that unless our organization and enlistment are carried out from the top to the bottom on some sort of scheme such as I have sketched out, our military machine will continue to be, as it is at present—a patchwork puzzle and a military muddle.

Colonel STUART, R.E.: Mr. Chairman and Gentleman, it is not, I think, too much to say, and I think you will agree with me, that the paper that was read within these walls last week, on the subject of "Recruiting," was one of the most admirable that ever has been read here, touching, as it did, in a thorough and masterly way, the important points of a most important subject. But when I look at this paper, I see the heading is "Recruiting for Her Majesty's Service," and therefore I hope I may be excused from wandering into those interesting bye-paths of kindred subjects relating to the Army, but not to this special matter of recruiting, and I should desire to stick closely to my text of recruiting. This subject, I have said, seems to me of supreme importance. It is a subject of such great importance that I think we should have for the discussion of it not only the soldiers and sailors who generally assemble here, but that in a matter where such great principles are involved, we might with great advantage have for the discussion of such a subject the statesmen of the country and Members of Parliament. I feel sure that you will agree with me that if such men were to come here and discuss this and other kindred subjects, we should receive them with open arms. For, gentlemen, the shaping of the policy and the security of the country, that is what is meant by such a matter as this of recruiting, because military efficiency tends to those ends, and recruiting is, I hold, the basis and foundation of military efficiency. If the system of recruiting that we have at present were faultless, then we should not be assembled here to-day. I take it, therefore, for granted that there are faults, and that I may refer to those faults. The faults that I would refer to under two large heads are those of inefficiency and extravagance. I say that the present system is inefficient, inasmuch as we reckon in the paper strength of the Army—the numerical strength of the Army—the deserters, prisoners, the drunkards, the frequenters of hospitals, the malingerers, and all the tribe of useless trash and rubbish that we have unfortunately to some extent in the Army. I do not think that Colonel Moody has at all overstated the practical effects of enlisting at once into the ranks doubtful boys rather than men. It was mentioned the other day in the papers, and I have not seen it contradicted, that in one of the numerous Egyptian expeditions that we have unfortunately had lately, there was not a man under twenty-three years of age who had not passed through the hospital. I think that is a very significant and lamentable fact, and it points at once to the inefficiency of much of the material and to the question of age, which is very important indeed to the efficiency of the Army. And then what a tale we see told in this paper regarding military prison life and the number of soldiers that are constantly in prison. I think it follows that there is in the Army a very undue percentage of men who do not come up to the proper standard of real efficiency, and therefore I hold that in my small way I have proved my thesis that one great fault of the recruit system is that it is inefficient. Then I come to the other great fault, as I say, of extravagance. Well, in all businesses in life in this and in every other country, the most extravagant thing you can possibly deal with is bad material; it is dear in every way; and in the Army, where we go and recruit a lot of material that is admittedly inferior, we have to pay not only for inferior men occupying positions in the ranks of the Army, but we have absolutely to pay for hunting them down as deserters and bringing them to justice, and we have to pay for the establishments where those men are being maintained in prison, and for hospitals, and the like. I say that is tremendous extravagance, and, therefore, I hold

that the whole military body bleeds at every pore, and that Inefficiency and Extravagance go hand in hand. It is no use talking of faults without suggesting remedies, and the remedy that I would suggest is that we must make the conditions of service and the payment of the service such as will absolutely attract the men we want to get; really good men of proper age, proper physique, and proper character to come into the Army. And then I say, secondly, that when you have got these men you have so to arrange and treat them that they will not want to desert, and they will not want to purchase discharges or in any other way to leave the Army. Now, to attract men, as a previous speaker said, you must go into the labour market, and you must bid and bid until you can get them, and you can get them easily enough, because you can offer very many advantages in the British Army in the way of training and subsequent situations, and so forth, and in that way you can induce men to join. Then when you have got them, you have to keep them. How are you going to keep them? Now, there is no doubt that those who have touch with the men of the Army do know as practical men that you have to remove such grievances as "stoppages." They are a very great annoyance and grievance to the soldier, and if the soldier thinks that he should have a free ration because he is promised a free ration, and he comes in and he finds he is not to have a free ration, then you ought to give him the free ration and have done with it. Next you have to treat men as men, and not as naughty children who have got to be put to bed at a certain hour and are not to be trusted, and are to be locked up like wild beasts. I do not consider that that is the way to treat men in order to keep them in the Service. Then I think the comfort and convenience of men in barracks should be very much improved. As regards living in barracks, it does seem to me that really good men, men who have proved themselves good and trustworthy, might be allowed to live out of barracks altogether if it so pleased them and they so required. But living in barracks, I should think that every man in his barrack-room should have some means of privacy, and it has occurred to me that in the great barrack-rooms which we have where there is no subdivision, and where you cannot put up permanent structures to interfere with light, ventilation, and so forth, you might very easily put up a couple of iron standards on the foot of each man's bed, and you might have three light iron rods with rings, on which you could hang curtains, and then when a man wanted to be private all he would have to do would be to draw this curtain and there he is, not in a grand castle, but still in a castle of some sort of his own. Now I come to a point which to me is very important. I think expulsion from the Army should be a punishment. Bad men we do not want, and a bad man should be turned out of the Army. We do not want him, we have done with him; we do not want to try and keep him, but to do without him. I think if that condition were carried out, this result would follow, the friends of men who come into the Army, and on whom so much depends, would regard service in the Army not as a stigma but as a thing to be desired, and that we should have good men come in with the consent of their friends. To this end, I think it would be a very practical measure, if in all subsequent recruiting upon the principles to which I have alluded, a written character, which could be obtained —we can all obtain written characters with our servants—a written character should be obtained for every man who is introduced into the Army. To all this there will be an outcry about the expense, "It is dreadful—all this costs money." To that I reply that in every business in this country, or in any other country which is prosperous, there comes a time when there must be a judicious outlay of money to be recouped afterwards with interest. I say that this is one of those cases that you have got a first expenditure to make, with the hope, and I think the certainty, of getting a very excellent return afterwards in such matters of saving as on prisons and on hospitals and on deserters and on drafts and invaliding. I will just mention my own personal experience in this matter of invaliding. I have been on foreign stations where I have seen constant batches, very large batches indeed, of invalids sent home who have to be replaced by drafts from home. I have seen whole regiments really knocked over, incapacitated for service, and sent away for sanitary reasons from one station to another. That is the most expensive thing you can do when you have to send home men who are sick and unable to serve; it costs money to send them out, and it costs money to send men from home to replace them, and

it costs you inefficiency when you take those drafts out of your home battalions and send them out and dislocate the home battalions in order to complete the foreign battalions. Foreign nations have their own system of recruiting, and they can take care to have good men, because they can take the average manhood of the country. We have not got conscription, and Englishmen say, "We won't have conscription;" and it is a moot point whether they will have to come to conscription eventually, but at present they enjoy the luxury of no conscription, and that luxury, like every other luxury, must be paid for. I may say, in conclusion, that it behoves us, in these crucial days, to be ready for fearful eventualities, and to maintain the efficiency of the *personnel* of the defensive Services is a sacred duty not to be lightly regarded nor negligently overlooked nor shamefully shirked.

Major ELIOTT: I rise, Mr. Chairman, to address this meeting with some degree of diffidence. It so happens that I was born, brought up, and educated, not, perhaps, in barracks, but in the same educational establishment as our worthy and distinguished Chairman. I retired from the Service owing to ill-health, and went into the country to live, but, getting rapidly well, I returned. At that time military flogging came on for discussion in the House of Commons, it was made a party question, the press of the country was teeming on the subject, there was a tremendous controversy going on inside the House of Commons, the whole country was being roused on this question. In my early years I have seen 300 lashes delivered on to a man's naked back with a cat-o'-nine tails, I have seen a man's back on the first stroke of the lash——

General BRAY: I wish to know whether this has anything to do with the subject of recruiting, because it seems to me that the honourable gentleman is going entirely away from his subject.

The CHAIRMAN: I understand Major Eliott to refer to the question of flogging as having a bearing upon recruiting.

Major W. J. ELIOTT: I was going on to say that military flogging was happily abolished, and to point out how I had been led into investigating matters at that time affecting recruiting and soldiers. Finding that very few military men were discussing in the press the question of the soldier's treatment, I thought I should like to say something from the military aspect of the question. I accordingly wrote my views to a daily paper. I was subsequently sent for by the editor of that paper, and was given a roving commission to go through the barracks within a certain radius of London to see the life of the soldier and to write about it. I did so. I had a roving commission, and went about for several months. I went first to the Life Guards' Barracks; I saw their life there, and there were several things that very much surprised me. Colonel Owen Williams received me very kindly, and everything was carefully explained to me. With regard to the food particularly, I was very much surprised; I saw the rations, I saw the way that the barrack-room was kept, I went into all the barrack-rooms, and, as I say, I was very much surprised at the dinners. I asked, "What is the ration, ¾ lb. of meat?" "Yes." "With or without bone?" "With bone certainly." "Let me see it on the men's plates." I went and saw it on the plates, and there I perceived some small bits of meat floating about among potatoes, greens, and so on. I said, "Is this all that those great men get for their dinners every day?" "Yes, every day." "Why," I said, "how do the men manage to exist? Surely they cannot live on these little bits of meat swimming about here?" "Oh," said Colonel Owen Williams, "the men's friends and the Officers help to keep them; it is not half enough meat, but what with the Officers' contributions and the baskets that the men's friends send from the country, they manage to keep body and soul together." I went to Chatham; I inspected the Royal Engineers' and other barracks. There were certain barracks that I found extremely dirty. Of all the barracks that I saw at Chatham, the Royal Engineers' barracks were the most satisfactory; the men's rooms were in a high condition of cleanliness; they had a splendid sergeant-major whose particular province it was to look after the men and the barracks, and to see that the recreation rooms and so forth were all kept right. I then went into the meat question, and I found the same complaint there as I had found previously, and also as to their having no butter for breakfast. I went to a friend of mine at the War Office, and spoke to him about this matter. He said it

would be a very good thing for the men to have more meat. He went into a calculation and found that it would cost about 20,000*l.* a year for butter, and 180,000*l.* for more meat, and, after a long discussion, he told me that it would be about as much use to ask for 180,000*l.* for more meat for the men as it would be to try and get up to the moon. Therefore the whole question had to drop through. I have been extremely pleased to see that in the admirable and able lecture which has been read on this subject, Colonel Moody strongly recommends that another quarter of a pound of meat should be given to the men, for, I believe, as I pointed out to the authorities, that it would pay well to spend that 180,000*l.* I hope that something more will really be done to get the soldier more meat, so that he may be able to make more bone and muscle than he can out of the present rations. Over and over again I found that the meat in the plates, when weighed in the scales, scarcely ever exceeded 4½ ounces. It generally varied from 4¼ to 4½ oz. All I can say is, I should not like to be fed on such short rations, and I really think the men ought to have more meat. I also had to deal with the question of the Reserve soldiers, and I pointed out that the men are soldiers all the time that they are in the Reserve, and that I consider it the bounden duty of the State to take care of them so long as they are soldiers liable to be called upon. Now I come to one particular point, which is rather a painful thing for me to discuss, namely, the question of the inducements that you offer to the soldier to enlist. I must look back to a period of twenty years, to the time when the sergeant-major of every battalion was made sergeant-major for the purpose of looking forward to the Adjutancy of his regiment, and in nine cases out of every ten it was given to the sergeant-major, and was looked upon by the sergeant-major as his positive birthright. So it was with the paymaster-sergeant, the staff paymaster-sergeant looked upon the paymastership as his birthright, and he only took the one post with the object of getting the paymastership of the regiment. I have tried to urge that more commissions should be given to the ranks in order to induce men in these days of education to enlist. Every School Board boy sitting on a stool in a lawyer's office can aspire to the highest posts in commerce or in the professions, and I only hope the day is not far distant when the Army will be made a profession in which any man who enters shall be able to rise to Her Majesty's Commission. Then, I think, we shall have the proper inducement, and shall get the proper material to have a splendid and magnificent Army, such an Army as no other State in the world possesses.

General McKAY: I have listened to the last speaker with a great deal of impatience, for he has touched upon subjects which are foreign to the point under discussion. We have to consider our present system of getting recruits and what is the hindrance to that system. Now I am speaking to you, gentlemen, as one who joined the Army as a boy and passed through all the gradations up to my present rank, so that I know what it is to be in the ranks, I know its difficulties, and I know what it is to command a regiment. Therefore I do not speak as a novice or as a theorist, but I trust that I speak with some practical knowledge of my subject, First of all, the lecturer alludes to "Competition with other industries of the country." I say that if you were to increase the private soldier's pay to three shillings a day, you would not be able to compete with the industries of the country, and it would be a very great mistake to give such a high rate of pay, you would only get the same individuals that you get now. Again, we are told that the quality of this individual that we call a *recruit* is sometimes a boy, sometimes, as our gallant Colonel says, a "hobbledehoy," and sometimes a man, and we call him a *soldier*. There has not been a period in my military career at which we did not get the boy and we had to make him a man, and when we made him a man, we made him a good soldier in my experience. But the drawback now is, that we have not the time to make the boy the man and the soldier. Again, as to the quality of this individual. I superintended the recruiting in Suffolk and Cambridgeshire. In my early days we had no such thing as a "physical equivalent" in passing men into the Army. If the doctors chose to exercise that responsibility which now is thrown upon them, we should not get into the Army the *weeds* that are loudly and justly complained of, and if their data be of any value the lad of twenty should be relied upon. The "physical equivalent" is based upon data tabulated from statistics for twenty and more years past in the Medical Department.

I say that that "physical equivalent," if honestly carried out, ought to secure the country against getting weeds to the extent now heard of. We are accusing the Government; the Government make arrangements and issue regulations, I say you must protect the Government by carrying out those arrangements and regulations. It is all very well to say to the Government "Do this and that!" The Government lay down rules, and if they are disregarded, then let those who disregard them be held responsible. It is the same with regard to food; we have just heard about the question of food from the former speaker, who has told us he went round about London for thirty miles to see how soldiers live. He ought to have gone to the West Indies, to India, and to America, where he would have seen something of the soldier's life. I made my remarks upon the food question a little time ago in this theatre, and I say, without fear, that the soldier has plenty to eat in time of peace, and that in war his food must be increased in order to enable him to meet the greater hardships that he has to undergo. As to going round the barrack-rooms, and saying that he has only three ounces of meat and that swimming, I have no knowledge of such experiences in my chequered life in the Army. I think if you take the majority of men you will find that they do not eat ¾ lb. of meat, bone and all—I mean the bone weighed with the meat. We have not got to the time when we can buy carcases without bone. I do say that the Government contracts are very well guarded to secure every soldier a good supply of food, and the Officer does see he has it. I may also say to this audience that the Service is vastly improved with regard to the variety of ways in which the soldier's food is now cooked; there is no comparison between what the soldier is now, and what he was when I joined in 1837. Then as to age, the "physical equivalent" should be a protection, now that you are not to have a soldier under 20. I would really go back to the time when they enlisted at the age of 18, for I feel satisfied of this, that a man who came forward and swore that he was 18 when he was only 15 or 16, will now swear that he is 20 when he is only 18; and as to getting characters with the men offering for enlistment, it is all very well for the Royal Engineers to require a character; and why do they do so for their recruits? It is because they have to produce a certificate that he has worked at the trade he names, and suppose the gentleman who has spoken about the "character," has had something to do with recruiting. Now supposing you have 100 men offer in the recruiting barracks, and each brings with him a character, how would you know that the character presented is a genuine article? You could not, it is impracticable. I have stated before a Commission, and I told H.R.H. the Duke of Cambridge, "Get the recruit when you can catch him, he will not wait till he is 22 and 23 to come into the Army; he will present himself before he settles down to definite employment. If he is a good-looking, stout, hearty lad, take him, keep him, and do something with him." Again, fault is found about feeding the Army from the Militia. The Militia is now affiliated with the Line, it is an accomplished fact, and we must forget the past. It is affiliated for that purpose, and my view is, that if the country would continue to avoid conscription, let this be done. Let the Army be maintained by voluntary enlistment as at present; let the Militia be kept up to *three times its present establishment* by the ballot; let the Volunteer be an efficient without costing the country one farthing, except for instruction, accoutrements, arms, and ammunition, with the privilege of exemption from the Militia ballot, subject to proving his efficiency annually; and let the Militia supply the quota necessary to keep up the strength of the Army when it fails to do so, by voluntary enlistment, that is my scheme for our national need as regards soldiers. Then, again, we come to the treatment of the soldier, and remember him when he was treated very badly, but now he is treated very well. I have only recently come from command, and I know he is not treated with that harshness that he used to be in years long ago. There are one or two points that might be remedied, and those are in the hands of the Commanding Officer. When the depôt was first opened at Bury St. Edmunds, the Adjutant enquired about the "tattoo." I said go by the Queen's Regulations, but do not let any man be confined in the guard-room if absent on tattoo who comes into barracks sober before twelve, which rule I found to work well. If you had the barrack-room opened from six o'clock in the morning till six o'clock on the

following morning, when would the unfortunate soldiers, many on guard the previous night, have a moment's sleep? We should not like our own houses to be intruded upon in that style, and why should the barrack-room be? It is in the power of a Commanding Officer to lay down a rule, that every man coming into barracks before twelve can go to his barrack-room, but I must not be understood to say that I allowed the irregularity of absence to pass unpunished either by reprimand or otherwise. The soldier's life is one of discipline and order, and must always be viewed as such when considering his interests. As to allowing the men to sleep out of their barracks as suggested, what a pretty mess we should get into! Provided the alarm went at night or fire broke out, how could you send out to get them into the barracks? Then about the punishments of the soldiers, I must say that there are too many courts-martial. I avoided them thuswise, without detriment to discipline, and I can refer to Lord Chelmsford, who has seen my regiment, as to its state. When a man committed himself in a way that ordinarily he would be sent back to the guard-room for trial by court-martial, to be assembled in three or four days' time (if for a garrison court-martial, two or three weeks), I dealt with him summarily by imprisonment in cells from three to seven days *at once*, reasoning to myself that if this man goes back to the guard-room, his comrades will sympathize with him, and in place of his misconduct being looked upon as an offence against discipline, his comrades by delay would commiserate him. The result was, that I minimized my crime, my theory being, that "If punishment is to be deterrent, it must follow quick upon the commission of the offence." Thus I managed, and during my personal command I never had a general court-martial in my regiment. I was questioned on one occasion by a General Officer, who thought the number of acts of drunkenness in the regiment from a monthly return rendered, was very great. It was in a station in India, where the men had every opportunity to get drink; I said, "Sir, how many acts of drunkenness are there?" "Ninety." I replied, "Ninety! there are thirty days in the month which gives an average of three per day, and divide 3 by 900, the strength of my battalion, the result is only one-third per cent." I said, "If you took a net and spread it over the intelligent community of Calcutta, including the clergy, you would find more intemperance than that, particularly if you subject them to the tattoo inspection, '*not proving*' as my men were." No, the soldier is not so bad as regards drunkenness as he is thought to be. He wants treating as a man. When he is a boy he must be guided, handled, but not pampered and spoiled; he soon gets into our habits, and he likes his Officers, as he grows into acquaintance with them, for there is no Army where there is such mingling, and such respect and esteem the one with the other. Then as to sickness. Surely with all the pains that can be taken to pass men, and robust men, into the Army, you cannot blame the authorities because a man gets sick. If he goes to Egypt, into a temperature of 109° in mud huts or in tents, do you suppose he is not to be sick; with all your care you cannot prevent it, there must be sickness. Then about non-commissioned officers and commissions, I am an instance of commission myself; I was seventeen years before I got my commission, and, of course, my career has been most successful, but, to my mind, it is a great mistake, and it will be found to be so, to close the higher ranks to men who rise from the ranks; but it would be a greater mistake to allow men to obtain commissions who have not the education to hold the position. A standard is fixed, and has been well fixed, to secure educational qualifications for promotion. When I took the command of the 12th Regiment, I found that the school certificates were not sought after beyond that which would qualify a man to be a non-commissioned officer. I called attention to the subject on my orders and pointed out that I regretted no man strove for a first-class certificate, and promised that I would do my utmost for those who obtained it. Three obtained it; my orderly-room clerk—he was beyond the age for a commission—I got him a good billet, and he is now in a very comfortable position; one of my colour-sergeants obtained it, and he is now a Lieutenant; another man obtained it, but he was disqualified by conduct for anything—he might have been able to read the stars, or to do the most abstruse questions in mathematics—but, alas! he was his own enemy. I mention this to show that if there is a disposition on the part of our young men to join the Army

to rise, there is plenty of encouragement. Men enlisting from the ordinary ranks of society cannot hope to get a commission under eight or ten years, and if they get it then, their age, by the age disqualification, excludes them from obtaining any rank in the future of command. He cannot aspire to command, which, I think, a discouraging element in our recent Regulations. There is another point that I would impress upon those who have any influence with our War Office authorities, and it is this, that Quartermasters should have the opportunity of becoming Paymasters. Why it is not so is a mystery I cannot solve. This is a discouragement to your recruiting. Your Quartermaster is a good and an excellent man, and as such a right hand man to his Commanding Officer, and his commanding Officer would be glad to make him the regimental Paymaster, and there are those in this room who have been Commanding Officers, who could certify that their Quartermasters would have made very good reliable Paymasters. I contend that our pay system at the present moment is a very expensive one to the Government, and if I had the opportunity I could prove it to our celebrated Accountant-General present.

Lieutenant-General LORD CHELMSFORD, G.C.B.: Sir Andrew Clarke and Gentlemen, I feel quite sure that everybody in this theatre must be quite refreshed at the healthy groove that we have now got into with regard to this discussion. We are very much indebted to my old friend General McKay for the fresh life which he has given to this debate, which I am afraid was getting a little out of order. I shall try to emulate General McKay's example and confine myself to the practical bearings of this question. I am very sorry that I have not had time to study thoroughly Colonel Moody's interesting paper, and I trust he will not consider that I do not value it sufficiently if I am not able to touch upon all the questions which he has touched upon in it. Colonel Moody, after recapitulating the several steps that have been lately taken with regard to recruiting, says, "Yet the fact remains that the Service is still unpopular amongst those classes from which our recruits should be drawn." There is the whole secret of our failure in recruiting. Why is the Service unpopular? Of course we all have our own ideas on the subject, but my impression is that the constant changes which have been made in the recruiting requirements and conditions have a great deal to say to it. A man when he goes into any trade or profession wants to know exactly what his future is likely to be, and whether if he conducts himself properly he will be allowed to remain in it so long as he has the necessary health and strength and provided his conduct is satisfactory. It is quite true, as Colonel Moody says, that at the present moment practically continuous service up to twenty-one years, with a pension, is open to all who choose to avail themselves of it; and I believe myself we have arrived at a state of things in the recruiting history of the country which, if maintained steadily and stamped with the authority of the War Office as being a permanent system, will bring us in good and efficient recruits. We have now services of different lengths, and although I confess that as one of the old school I prefer long service, yet at the same time if you can induce men to come into the Service for shorter terms, and then, by treating them as Colonel Moody suggests they should be treated, show them that the Service is really a good Service, and that they can be happy in it and will be allowed to continue on to pension provided their conduct and strength permit it, I believe myself we shall have no difficulty in keeping up the recruiting of the Army to that point which is required. But if, after this present crisis is passed, men are to be bribed to enter the Reserve by refusing them their deferred pay on other terms, and then are to be told when they get into the Reserve they shall not be allowed to come back to the colours, however much they may wish it, then I contend you will have exactly the same difficulties to meet that we were suffering from only the other day. Fair, and free trade in recruiting is what is required. Colonel Moody states that the Army should be a national training school instead of what it is now thought to be —a national reformatory. He must permit me to say that I think his views on this point are somewhat Utopian. As General McKay has just said, we must take the class of men that we can get and make the best of them. I do not believe in any system of recruiting which will bring us nothing but what are called well-conducted men with characters; and I believe myself, from my own experience as a Commanding Officer, that we should be making a very great mistake if we were to exclude all men

from the ranks but those with unimpeachable characters. I believe that we should be doing a great national dis-service to the country by depriving those wild young fellows (who after all generally make excellent soldiers when they once come under discipline) of the opportunity of entering the Army, forcing them, as it were, into the lower grades of society, and making them a curse to the whole community. I confess to having a kindly feeling, I will not say for the bad character, but for the wild character. I have seen many of that stamp in my own regiment, and I can safely say I have never for one moment had an impertinent word from one of them, although I have very often had to punish them severely; and I have always felt the greatest confidence that those men would follow their Officers loyally in any difficult undertaking that we had to undertake. It is hopeless to try for an ideal army which is to consist of men similar to those in the Metropolitan Police Force. I should very much like to see our Officers on service commanding an army of that sort, but the thing is impracticable. We must take the men as we find them and try to make them as good soldiers as possible; and I am quite sure with a little trouble and a little addition, perhaps to their comforts as Colonel Moody has suggested, we shall be able to do so. I think we are all very much indebted to Colonel Moody for his admirable paper, and I trust that this subject may be well considered by the authorities. I see here present a gentlemen connected with the War Office (Mr. Knox), who has taken great interest in, and has had a great deal to say to, the present, and former systems of recruiting; indeed I believe there is no subject regarding recruiting during the last twenty years that he has not been consulted upon. I hope he will give us the benefit of his views and let us hear whether he approves of what has been suggested, or whether he thinks we are now in the right groove, and that our present system of recruiting does not require any further improvement.

Mr. Knox, C.B.: Appealed to, as I have been, by Lord Chelmsford, I cannot help making some remarks, although I am a civilian, and belong to a body which is evidently not a very favoured one here—the War Office clerks. One gentleman who spoke said he thought it was the bounden duty of the Government to set to work and consider what it was that was really wanted, and on that to base a system of service. As I take it, the whole system which we now have is based upon that one requirement, and that requirement is that as it is quite impossible to maintain our Army sufficient in numbers to meet all the demands that may come upon it, we must have a Reserve. The whole of our Army system is based upon the one requirement—that the Army unsupported by a Reserve is worth little or nothing at all. If any fact were wanted to prove that position, it is the use that we have made in recent years of that Reserve, and the use we now contemplate making of it. We have now 40,000 Army Reserve men to lay our hands upon, and we regard with comparative equanimity the disturbed state of affairs all over the world. There is one point mentioned in the paper which I should like to correct. Colonel Moody says: "I am not going to enter into the merits or demerits of short service, which Lord Cardwell instituted in 1870 as a panacea for the then existing evils. It was established on the most uncompromising grounds. Long service was to be quite abolished, and six years with the colours and six with the Reserve to be the extreme limit of the soldier's engagement." As that is not a correct statement of the facts, and Lord Cardwell's system was entirely different from that, I think in his defence—the defence of a man who is unable now to speak for himself—the memory of gentlemen present should be refreshed upon this point. The system which Lord Cardwell inaugurated was a system of long service and short service combined. The Short Service Act was passed late in 1872. The system which was then started, and the regulation formulated just as he was leaving office early in 1874, was that the Guards were to recruit 50 per cent. short service and 50 per cent. long service, the artillery 50 per cent. short service and 50 per cent. long service, the cavalry and infantry 75 per cent. short service and 25 per cent. long service: so that there was no restriction such as that which is mentioned in the paper when short service was first instituted. Lord Cardwell went out of office in May, 1874, and these regulations were in existence at the time and for some considerable time afterwards. I may say it was in 1878 that the change was made limiting the enlistment in the infantry to short service exclusively. Why was that done? For

the simple fact that very few men could be got to enlist for long service. The alternatives were put before the men, and except in one district, and I believe by one recruiting sergeant, of whom I can tell a story, the short service was in every case accepted in preference to the long service. The story is this. I remember speaking—I think it was to Colonel Peel—about it, and he told me that he had one sergeant who recruited exactly in these proportions—75 per cent. short and 25 per cent. long service. He was so struck with it that he asked him how it was that he did it. "Well," he said, "I did it in this way. I tackled the first three men I came to in the morning and persuaded them that short service was the finest thing in the world, and that was the system to go in for, and I got them. Then I tackled my fourth man, and persuaded him that long service was the system that he wanted, and that short service was the worst thing in the world, and I got him." The fact is that those who come forward to enlist are men who are easily persuaded one way or the other by a man with a good power of talking. Yet throughout the population short service was the popular service, and the main reason for giving up long service was that the short service so nearly approximated to the actual facts that it was thought advisable to limit the service of enlistment to short service only. What has short service done as regards the numbers of recruits? It has answered completely so far as the numbers are concerned; we had obtained the numbers of recruits we wanted throughout the whole period that short service has been in existence, except in the one case to which Colonel Moody has alluded. He states that we are now offering bounties, and so on, because short service has broken down. The reason why the bounties were offered to men serving in India to extend their service was this—that an experiment was made for one year in consequence of the recommendations of Lord Airey's Committee, to limit the enlistment of soldiers to men, or boys, if that expression be preferred, of 19 years of age, and that very limitation to 19 years of age, or its physical equivalent, lost us so large a number of recruits that it was with the greatest possible difficulty we were able to make up the leeway brought about by that change. It was a complete failure, and proved what General McKay has stated that he told the Duke of Cambridge, and what everybody who knows anything about recruiting will confirm—that you must catch the young fellow before he has entered his career in another line of business; for you cannot expect one who has started as a carpenter, or tailor, or trade of that kind, after working two or three years and getting fair wages, to come to you as a matter of wages. He may, however, be possessed with the military spirit which exists in a very large proportion of our population, and he may say, "I will chuck up this thing and go and be a soldier," and then you may get him; but it will not be a matter of wages with him. Although the numbers that we have induced to join our standards have been entirely up to our demands, still no doubt the waste, as it is called, in the Army is something terrible, and that is the point to which we ought to devote the whole of our attention. It is absurd, however, for people to think that we can arrive at a system which shall be perfect, under which we shall have no waste at all. It seems to be the idea of some that desertion can be prevented, and that everyone who once comes into the Army can be made to stay with it. I believe, as into other professions and trades, men come into the Army and do not like it, and want to get out of it, and if they have a 10*l.* note to pay during the first three months of their service they pay it, and if they have not, they bolt. It is but reasonable that they should do so. The men go into the Service voluntarily, and certainly some of them will find that it is not good enough, as the phrase is, and they will try and get out of it. Lord Chelmsford said he thought it was an ideal with some persons to command an army such as the police are. I took the trouble before I came here to look at the last Returns with regard to the police of the country. I have taken two of the police districts, one the Eastern and Midland Counties, and the other the Southern. In the Eastern and Midland there are 4,900 constables; the waste upon those for the year is 535, or 11·1 per cent. per annum in this force, in which the constables receive over a guinea a week with lodging and clothing. Of those, 325 had resigned—they have the power of resignation at short notice—107 were dismissed, 80 were superannuated, 21 died, and 2 absconded, making up the 535. In the other district, out of 5,516 men we find almost the same waste—552, or 10 per cent.: resigned 295, dismissed 108, died 79, and so

on, showing that in the Police Force, which is much more voluntary than the Army, and much more highly paid, there is almost exactly the same waste as in the Army, excluding, of course, those passed into the Reserve. The Reserve men are, of course, still in the Army, and in the opinion of those whose opinion I most respect they are the backbone and the strength of the Army. The waste in the Army from exactly similar causes is something like 12 per cent. per annum, so that whatever system you may establish in the way of pay and greater liberty and power of departure, I have shown, I think, that you may expect an amount of waste much like what you have at the present time. I should hope, however, that it may be checked to some extent, and I believe the best means of checking it are those which have been generally stated by Colonel Moody: "Their tastes and intelligence are not sufficiently appealed to. In the matter of discipline they are treated rather as children than as reasoning and responsible beings. Our system of passes and furloughs is worrying, and our punishments by their frequency lose their deterrent effect. The food even now is insufficient and badly served, and the barrack-room is too often so uncomfortable as to drive the soldier from what should be his home to the public-house"—and so on. I believe that amelioration in those directions is likely to be the best cure of this extensive waste; but that it can be prevented altogether, or prevented in a very appreciable degree, I believe is extremely doubtful. One other point has been alluded to by Colonel Moody, and that is the employment of men when they leave the Service. I believe that also would be a very great inducement to men to join, but it is a fallacy that I have frequently seen put forward, to believe that the Government can make provision by means of situations at their disposal for the employment of any large number of these men. Take the Police Force. It has often come across my mind that appointments to the Police should be limited to men who have done Army service. How many do you suppose this would provide for? 50,000 men. The annual exodus of men from the Army passing to the Reserve should be between 15,000 and 20,000. It would be necessary if employment from the age of 25 to 55 were to be given to those men, to have half a million positions to meet their wants. To state that proves that it is perfectly impossible for the Government to make provision in the way of employment. The whole Police of the country is only one-tenth of that which would be necessary. But what I believe is really the solution of this difficulty, now that we are keeping the men eight or nine years, is that during that time we should teach them at the expense of the public to do something to enable them to take up a position something better than that of a messenger when they leave the colours. Let the men be relieved from some of their sentry work, some of their barrack-yard drills, and be taught to do something which will make them more useful members of society when they revert to civil life.

Lieut.-General LUARD: I have not heard this lecture, nor have I read it, and, therefore, if what I am going to say has been said by others, I can only say I am sorry. I have had something to do of late with seeing men join the Army at Aldershot, and it has struck me that although the rules laid down for the admission of recruits are quite reasonable and good, these rules have not been carried out by the recruiting authorities in the manner in which they should be. Rules have been laid down as to the physical size of the recruit, and though I will not say anything about his height, yet I think his chest measurement is very important. It is laid down that the recruit shall have a chest measurement of 34 inches, or if the medical Officer considers that he is likely to become a fit man, he may go down as low as 33 inches. A batch of recruits came into Aldershot the other day. I inspected them, and seeing that they were under-sized, I had a number of them measured. We measured them; we reported on them to the General Officer Commanding; the Commanding Officer of the regiment reported to the Brigadier; the Brigadier reported to the Lieutenant-General; and the report was sent to the Horse Guards. An order came down that they should be re-inspected by a specially selected medical board. Nineteen were recommended for discharge. The special medical board inspected all those men, and they said that thirteen of them had been improperly enlisted, that they were not fit to become soldiers, and they will therefore be discharged in a few days. Now those men had been kept by the country, I believe, three months before I saw them, and the result will be that they will have been five or six months in the

Service at the country's expense, being clothed and fed, and being all the time unfit. Whose fault is that? Is not that the fault of the inspecting Officers who passed them into the Service? And if rules are laid down, should not those Officers be made to carry them out? And should the medical Officers be encouraged to pass those children into the Service? I say it is wrong. My idea is this—we put temptation into the way of a young man which we have no business to do. He tells the sergeant who recruits him that he is 18 years of age—he is induced to tell a falsehood, for he is told that he must be 18, and he is not 18 years of age. Because he has to begin the Service at 18, he says he is 18 when he is only 16, 15, or perhaps only 14½ years. I say, for a practical nation like this, it is the worst and most uneconomical thing possible to take a fellow in at 14½ or 15. I heard the other day of a case which had been referred about the date of birth, and it came out that the recruit was only 14½, although he called himself 18. However, say that the boy is 15½: he is only 22½ when he is sent, after 7 years, into the Reserve. Is that good? I say that a man should remain from 18 up to 25, and not go to the Reserve till then—that should be enforced upon him. I will tell you how I think it should be—we should not ask the man's age. Of course he tells a lie—of course he does. I would not ask him. The inspecting Officers should say, "I put this boy down at 15½, or 16, or 17," or whatever he thinks his age really is, and then he should say to the boy, "Now we will take you at the age I say—we will take you at that age if you like to come. We will give you boy's pay, make you a soldier, and at 18 you shall be fit to be a soldier on man's pay, and in seven years from that you will go to the Reserve." That would be practical and economical, and it would get service out of him at the other end instead of this end, when he is of comparatively no use.[1]

Captain O'CALLAGHAN: I have no wish to controvert the accuracy of the statements, or the soundness of the opinions, expressed in the lecture on one point, viz., the physical inferiority of boys obtained from institutions as compared with those obtained from families; yet I would ask to be allowed to make a few remarks with regard to one industrial school which is not far from this neighbourhood—the Newport Market School; and my reasons for mentioning that school are that it is the only one I know anything about, and that the remarks in the lecture as to physical inferiority do not seem quite to apply to boys from that school. The number of boys in the school at present is 68, and of those who leave it every year three-fourths join the regiments of Her Majesty's Service. The connection of the boys with the school does not cease with their enlistment, because reports are sent periodically from the regiments as to their progress, and from the last annual report it appears that of 216 boys who joined from that school, only 4 have turned out badly. As late as last night I visited that school, and saw the boys just before they were going to bed. They looked strong, healthy, broad-shouldered, happy, merry fellows, and I have been told that the authorities of the school are anxious that Officers, and others who are interested in the Service, should visit it at any day or hour without giving notice. I thought it well to say, whatever may be the state of boys from other industrial schools, that with regard to this one, at all events, the inferiority which is stated to exist does not apply.[2]

Maj.-General GLOAG, R.A.: In the interesting lecture which some of us heard on Friday I find the following prominent points:—1st. Our so-called volunteer system of recruiting has hitherto entirely failed, and the quality and quantity of our recruits have been, and still continue to be, gravely deficient. 2nd. In 1782 compulsory

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[1] The system I suggest would bring into the Service a number of youths training up for the Army in a manner somewhat similar to that already found to answer admirably in the Navy, where no man is now received from the mercantile marine, but all are brought in after a course of instruction as boys.—R. G. A. LUARD.

[2] I should like to add that there has not been a single death in the school mentioned above for 16 years. For 14 years of that time, it was in the unhealthy locality the name of which it still bears; yet the judicious use of disinfectants, and the great care taken of the boys in every way, were absolutely successful in preventing mortality. The school now occupies a suitable building in Coburg Row, Westminster.—E. O'C.

service was necessary. In 1806 short service was first introduced under the Wyndham Act. In 1808 unlimited service was reintroduced. In 1829 life service was reintroduced. In 1847 the Limited Service Act was passed. In 1855 any person might be enlisted for a period of ten years in the infantry and twelve in other branches. Three years' enlistment was authorized under this Act, and it was renewed for three years, but did not come into operation. 3rd. The Act of 1847 remained in force till 1867, when the Recruiting Commission of 1866 recommended an Act, which was passed, altering the times of service from 10 and 11 to 12 and 9 years, with re-engagement to complete 21 years. These terms continued till 1870, when short service was reintroduced. 4th. We then find the bounty system —one which, as every Officer in the Army knows, was an unmitigated evil—was abolished in 1867. The soldier's position till 1860 was, as compared with to-day, an indifferent one. 5th. The loss of men under all these systems—taking 1884 as a typical year—by desertion, invaliding, discharges of all kinds, amounted to 11,983, and this was exclusive of 1,512 prisoners, making a gross loss of 12,495, or at the rate of 5 per cent. in peace time! Think what this loss would amount to in a great struggle with any of the powerful Empires of Europe. 6th. For successful recruiting it is necessary—(*a.*) To bring the most desirable class of men into the Service; (*b.*) To induce them to remain in it; (*c.*) To provide for their future, when they leave. 7th. With regard to this we are told by Colonel Moody, we ought to show that the training the soldier receives during his term of service is one which leaves him at the end of such service better than he was before he joined. 8th. Then follow many facts regarding crime and punishment, food, barracks, clothing, and furlough. The lecturer then winds up by saying: "There is only one thing to be done, and if done thoroughly it will be the cheapest in the end." It is comforting, if true, that only one thing requires to be done. "The Government must take active steps to meet the needs of thousands of poor fellows it yearly turns out upon the world, only keeping an eye on them for its own interests and theirs; and the only plan is to urge upon all public bodies the justice and necessity of employing ex-soldiers in preference to civilians in those humble places of trust for which they may be fitted." 9th. The lecturer then concludes that part of his paper, "Recruiting from the Army," in which I am, as an Army Officer, alone interested, by giving some details concerning boy enlistment and military schools. Boy enlistment and schools are most important, and they cannot be too carefully attended to and utilized to the utmost possible extent. Now, even with all this, as far as we have gone, we have signally failed, if I am to believe what I am told, to get the number and class of recruits that we desire to have! What then shall we do? In the first place, I ask, what number of men do we require for our Army, which shall meet all its demands in such a scattered and immense Empire as ours? Secondly, what proportion of men are our Colonies to contribute to our Army? Conscription is a widely acknowledged evil just because war is such a dreadful evil, and in Great Britain there has been, and still is—though, I believe, not so strong as before—a rooted prejudice against it in any shape. But I confess, if we are to remain a military Power for good purposes, that is, if we are to be able to say to this mighty military Power, and to that mighty military Power, "You shall not do this, or you shall not do that," the tinkering system we have hitherto pursued will only land us in some dreadful disaster. Militia, Volunteers, Short Service, Reserves, all have been more or less carefully fostered under extreme difficulties, with a view of putting off the evil day of compulsory service. But, while we have vast continental armies, capable of being brought up in the aggregate to 12,000,000 or 15,000,000 of trained soldiers, we must not listlessly look on, if we desire to retain our position upon the *rôle* of Empires. With reference to this a late writer has well said: The advocates of Universal Conscription, and those who look upon our peculiar system of voluntary recruiting, which we are led to believe is the only one suited to our highly developed sentiments of individual freedom and conscience, from an adverse point of view, say "that this latter system simply signifies that the *rich* ease their own bodies at the expense of the *poor*," that is, *that the minority sacrifice the majority to their selfish interests*, "because they are allowed to hire others"—(I might almost say *slaves*, as for the time they are so hired they have neither freedom nor liberty of conscience, nor is it possible under the circumstances that they can, or ought to enjoy such

blessings)—"to do for them what the nation has an undoubted right to expect every able-bodied man to do for himself in his own person. The moral fastidiousness displayed by the advocates of the so-called *voluntary* recruiting, and the opponents of the *Universal Conscription* systems, is only surpassed in China, where it is said men may procure substitutes for the gallows. Not only this, but we resort to all sorts of systems of recruiting, including the pot-house system and others even worse, to induce certainly not the best class of men to enlist. Well, this may be convenient, even as it was convenient in days gone by to ship criminals to sea, who had not worked out their punishments, and to make them serve in the King's Navy, instead of perhaps being hung, as they deserved, but this is not assuredly *voluntary enlistment*. These are not practices which entitle their advocates to look down upon other nations, from a high moral pedestal, who only expect and demand each able-bodied citizen to act up to the immutable law of nature, *self-preservation*, and to bear his share in his own and his country's defence." Moreover, this bribery system of obtaining recruits does not tend to raise the moral status of the soldier, nor yet to fire his bosom with national patriotism on a grand scale, but quite the reverse. It must not be forgotten that times have changed, and military manners and customs have changed, among all warlike civilized nations. Nor must the fact be ignored that in forming our Army it must be so organized that in times of peace and confidence it will not prove oppressive, and in time of war more expensive than our finances can stand, or we shall have, in order to avoid these results, ruinously to increase our already too great National Debt. If the Crimean war added many millions to our debt, what would not a great military struggle in Europe, in which we were forced to take part, perhaps under most disadvantageous circumstances, and to fight for our very existence as a military Power, not add to it? And where would all this end? The National Debt is but young, yet how rapidly and enormously has it grown! If our financiers are prepared to maintain that this debt can with safety be indefinitely increased, and can satisfactorily prove this, then it matters not what we may do; and if this be true it would be far better to hire an army when we want one, from some other Power, with plenty of spare able-bodied males, to fight for us, just as we hire a cab when it rains. The evils that apply to conscript soldiers as regards taking them away from useful work applies with equal or even greater force to all Reserve men; witness the howl which invariably arises when the Reserves are called out; but it would not be so bad with Conscripts, because, in the first instance, they are but young soldiers. Until "the lion lies down with the lamb and a young child shall lead them," we must keep pace with the other great civilized Empires of the world, or sink lower in the scale of nations; who shall say how low? This I think no patriotic Britisher would desire. What seems to me—but it is only a humble opinion and must be taken for what it is worth—to be necessary is that we should have a regular standing Army of, shall I say, 300,000 men, of all branches, bound to serve for a period of not less than twelve years, with, in addition, universal conscription or liability for personal military service, without substitution or dotation, for every able-bodied male of twenty years of age, with certain exemptions and limitations to be determined from time to time by Acts of Parliament, that is by the national will, in view of having a thoroughly sufficient and efficient force at all times ready, so that we may no longer be subject to demoralizing panics when any great continental Power proposes to do something or other which we think detrimental to our interests or dangerous to our vast and scattered Empire? The "silver streak" and our insular position no longer render us invulnerable, with steam navies and electric telegraphs at work. In carrying out a modified system of conscription, the services of all half-pay and retired Officers below the grade of General Officers, and of all discharged soldiers of every class, could well be utilized. By the operation of certain Royal Warrants issued of late years, we have hundreds of half-pay Officers and others forcibly retired, fairly blue-moulding in comparatively early life, who would look upon the day they might be re-employed, in ever so humble a capacity, as the brightest spot in the vista of their waning lives. Sir, I have done, I have already too long tried your patience, and I will only add one word more. I know that, some years ago, one of the ablest of my younger brother Officers read a paper on Conscription in this place, which was not received with a popular outburst of

enthusiasm, but in a cold, frigid, if not hostile manner; but, Sir, the times are critical, and all patriotic subjects of the Crown should speak out, for we must adopt some strong measures if we desire to remain, what we have always hitherto been, and which I trust we ever shall be, the foremost civilizing Power on this planet. Modified conscription, with a standing army, which is absolutely necessary as long as we have to hold India "by the power of the sword," or a return to a local European army in that country, will, in my humble opinion, do much good in Great Britain. It will train young men early in habits of discipline and self-control, it will in a great measure decrease crime in the Army, as we shall have the flower of the nation, we shall thus gain in men and money, and moreover, when the civilized world sees England determined to be overwhelmingly strong, the disturbers of the peace of nations will most assuredly be more circumspect in entering upon any measures which might lead to an outbreak of war, which, in these days of deadly machines for taking life, is more destructive, expensive, and decisive, than it has ever been.

Captain CURTIS, R.N.: The great thing is to keep faith with the men, for if the Government keep faith with the men, the men will serve the Government well. With regard to recruiting, I see a statement in the "Morning Post" that there are 800,000 men less in the rural districts than there were ten years ago. The able-bodied population is coming into the towns, and hence the recruiting must take place in the towns. In 1862 or 1863, coming home in H.M.S. "London" to be paid off, 200 fine fellows, all second-class conduct men, were discharged on the pier, and were told by the Government that their services would not be wanted any more. Where did these men go to? They went to serve in the American Navy, for which they had been trained by our Government (practically). They were some of the finest men that ever stepped on board ship. It was really painful to see them treated in that way; many having been in our Service from boyhood, and looked to our Service for support through life. I must in a measure support General Alexander when he said that flogging did not create discipline. If it is *discreetly* administered, I think, flogging does *in a measure* create discipline, but in one ship that I was in, and in which there was more flogging than in any other which I have served in, the discipline notwithstanding was the worst that I have ever seen. I say that discipline and maintenance of good order depend, in a great measure, upon the Officers. Let the Officers set a good example to the men, and treat them as rational beings, and then I think that stoppage of indulgences will be quite sufficient punishment in most cases. I say we should treat the men as reasonable beings. The last time that I was at Naples the men went, like the Officers, to see Pompeii and to the country places, and enjoyed themselves thoroughly. I think if Officers and men have leave to go into the country, they benefit their own country thereby, viz., by acquiring a knowledge of others. The lecturer has said that sea-shore lads are the best. I have always advocated enlisting this class. Now I remember when I was in the "Majestic," boys walked all the way from Manchester in order to join the Service, and we had to send many of them back. I think if in every village post-office there were directions put up and posted, so that the boys thoroughly knew what was expected when they came to join a ship, they would not so many of them be disappointed in that way. With regard to the Naval Reserve, I think if our young yachtsmen and our gentlemen owning boats would set an example to the shore population, we might easily establish a voluntary force trained as torpedo men or as artillery men, who would be very useful to assist in beating off an enemy from the coast and protecting fishing fleets. Train lads from 16 to 21, not older. I am sure it would be very important if we could get a Coast Reserve Service of that sort which would be able to defend our coasts within a radius of 25 or 40 miles, and it would be a good thing to hold out a few rewards to such men. We want a force equivalent to our Volunteer Rifles for shore service, and that would enable us to relieve our fleet. There are many boys in the country, fisher lads, who would be sure to come forward and serve if they only knew that they would have a chance of being entered.[1]

[1] See Alison's Essays, vol. 2, p. 658, "Ships, Colonies, and Commerce." On the 20th October, 1805, when Napoleon stood on the heights of Ulm, to behold the

General BRAY: I wish to say a few words with regard to the remarks which have been made by General McKay. General McKay is a man who has seen the Army, and has a thorough knowledge of what he is talking about; all through it is evident that he knew everything that he was saying as being absolutely true and absolutely what occurs in the British Army. I think every gentleman who listened to him will be very much obliged to him for having made the remarks that he did, which show that an Officer in his position can see and judge what is good, what is bad, and what is indifferent. We have also listened to another gentleman, Mr. KNOX, who belongs to the War Office, and whose name is closely connected with many changes that have been introduced into the British Army, not altogether, I think, to the advantage of that Army. I feel perfectly satisfied from the hesitating way in which he delivered some of his sentences that it was precisely the same kind of speech that we have heard delivered over the table of the House of Commons by Mr. Cardwell and Mr. Childers, speeches loaded with platitudes, fallacies, and inaccuracies most misleading to the outside public. I think it is a very bold thing for Mr. Knox to do to come here and to have spoken in that way before an audience of Officers of the Army and Navy who know perfectly well that nearly everything that should not have been done has been done, to the detriment of the soldiers and Officers of the British Army for the last fourteen years. I also attack, and am ready to controvert, the accuracy of several of his statements. He says "long service" broke down. I deny most distinctly and flatly that long service ever *broke down*. Long service did *not* break down; long service broke down because the Government would not pay the proper and necessary pensions that were required in the present day for obtaining soldiers. That is what broke long service down and nothing else. Then the Government introduced short service, and for 14 years the country has been tentatively trying short service, 3 years, 6, 9, and 12. They had a War Office Committee, presided over by Lord Airey, which made most admirable suggestions, and pointed out plainly that pensions were the solution of the whole questions.

The CHAIRMAN: Will you forgive me? I understand it is the practice of this Institution not so much to criticize and review statements made by those who take an independent part in the discussion, but to limit the criticisms as much as possible to the statements made in the paper. I am afraid if we discussed matters and statements make by each separate speaker, we should be led into rather a difficult field.

General BRAY: Very well. As I cannot discuss the matter here, I now challenge Mr. Knox or any responsible Officer of the War Office to discuss the matter in any large public room in London before a thousand people. I would then be most happy to discuss all the innovations and War Office changes which have been made during the 14 past years, and which the Officers and soldiers of the Army consider not only most destructive to its efficiency but revolutionary in character. As Mr. Knox may require assistance, I will throw in the whole of the War Office to help him in his defence.

Colonel MOODY: Mr. Chairman, my Lord, and Gentlemen, I must confess that I am much pleased and flattered at the manner in which my poor efforts have been received by the gentlemen who have taken part in its discussion. I laid great stress on the good results which would no doubt emanate from the discussion, and I am glad to find that it has been so full and exhaustive. In the main the gentlemen who have spoken have concurred in what I wished to urge; and although in some instances there has been a little wandering from the strict subject matter, on the whole the text has been adhered to. I carefully avoided mentioning Conscription, as it cannot be considered practical. If the country refuses to carry out the Militia Ballot Act, it is not likely to permit Conscription. In the discussion on the Prize Essay by Major Hime, R.A., for 1875, the feeling against Conscription was so

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captive German Army defile before him, his steady mind regarded only the future; he said to those around him:—"Gentlemen, this is all well; but I want *greater things than these;* I want ships, *colonies, and commerce.*" England has by circumstances, more or less inevitable, acquired these three vital necessities, and it now remains for her to hold them.

marked that the subject has not been reopened since. It being taken for granted that the determination of the country is that the public services must be recruited from volunteering sources, it cannot be too strongly urged that it behoves those who will not serve themselves to give every assistance and encouragement to those who will. I cannot lay too much stress on this point. Again, I avoided the vexed question of altering the titles of regiments, although I was quite aware of the strong feeling which exists on this point. Owing to the want of popular sympathy we have hitherto failed to get the right stamp of recruits. Let us secure this sympathy, which it is the bounden duty of all classes to accord, and I feel quite sure that the rank and file will then be placed on a right footing. I again repeat that we must give the men some contingent advantages to look to. I am well aware that, as Mr. Knox has urged, it would be impossible for the Government to provide situations for all Reserve men; but there is no reason why it should not do as much as it can—and that it certainly does not do at present. Parliament has the matter in its own hands; a mere resolution would have the desired effect of compelling the Government in office to fill up certain situations with these men. A Committee of the House of Commons recommended such a measure in 1876; but no action has been taken on the Report of that Committee. Again, a Department Committee, under Mr. Shaw-Lefevre, sat in 1882 to consider what messengerships in public offices might be filled by them; but with the exception of those in the Admiralty and War Offices and park-keepers there has been, as before, no result. There is apparently no eagerness to obtain the services of the trained and disciplined men. I fear it is because there is a feeling that the soldiers' training is not what it should be. Let us remove this feeling, and the difficulty will be overcome. Soldiers must be taught to have confidence in themselves and to respect themselves. When, as a body, they get the credit of doing so, a vast stride will have been made towards the solution of this difficult problem. I do not advocate the teetotal system. I have advisedly said that we must establish a public feeling in the Army against *excess* in liquor. Teetotalism is all very well in its way—and is necessary for some men; but I must say that, as a rule, I prefer to see men able to trust themselves. I would by no means advocate keeping the wild young fellows, referred to by Lord Chelmsford, out of the Army. If our discipline is what it should be, the Army is the very place for them. But what I do most emphatically advocate is the keeping out the vicious class and the fraudulent enlister. The average youth who enlists is not vicious; but association, and the example of such as are, will and often does make him so. The gaol bird should on no account be taken. This most honourable profession is not the place for such a character. There is no excuse for passing him in, as his appearance cannot be mistaken. With pains you can make the average recruit almost anything you like; but you cannot reform the gaol bird. If once enlisted, he simply moves from one regiment to another, as his fancy directs; and his class fills or helps to fill our military prisons. On the vexed question of age, I consider there is much urged that is fallacious. I would prefer to see all recruits under twenty on enlistment.[1] Get them young and they will stay with you. You must, however, feed them well, so that they may rapidly develop. It was with much regret that I found General McKay, in his eloquent and practical speech, did not agree with me as to the advisability of an increase of the ration. I must, however, adhere to my own opinion on this point—an opinion only arrived at after long and careful observations. I take the men of my own corps as example. We advisedly take recruits at seventeen. The way in which they develop when they first embark and get the liberal Navy rations is truly wonderful. Feed your recruits well, and you will do much to diminish the craving for drink. It is on this point alone that I have advocated any increase of expense, and I am convinced that it would, in the long run, prove the truest economy. All my other suggestions are points rather of management than of money. The great waste in the Police as compared with the waste of the Army is not much consolation. If the average is as great in all the counties as it is in those mentioned by Mr. Knox, there must be something decidedly wrong; but at the worst the numbers

[1] It must be understood that I here referred to the ordinary conditions of service, not to the exceptional requirements of an emergency.—J. McD. M.

in the police force are easily filled up. I plead guilty of a slip in implying that Lord Cardwell established uncompromising short service. It was not adopted until 1878. Still, it has been generally understood in the country that short service was the Cardwell system; and, in so speaking of it, I had certainly not the slightest idea of attacking the system or the statesman who introduced it. With all its drawbacks it has given us what we never had before—a large, efficient, and reliable Reserve, which is now, at last, steadily increasing. The value of this Reserve at the present critical time cannot be expressed. Like everything in our country the conditions of service are a compromise; and now that we have what may be termed free service, no one can complain. During the last five years a great advance has been made in popularizing the Army, and a careful study of the Annual Reports of the Inspector-General of Recruiting will show what has been done. The present system ought now to have a fair trial: to make it successful is the business of those who are charged with the details of its working. I must own to feeling a little disappointed that none of the speakers have referred to the question of boy enlistment. It is a point on which I was especially anxious to elicit the opinions of some of the very capable Officers who have taken part in the discussion.

The CHAIRMAN: Gentlemen, at this late hour I will not detain you very long in asking you to recognize the great service which Colonel Moody has performed in reading this paper. We all remember that during the last two years both in the press and in Parliament there has been a considerable amount of agitation and excitement with reference to the imperial defences of this country. We have had talks of forts and torpedoes, of fleets, guns and squadrons. It has always struck me that we were creating a fabric without a foundation. Guns and forts, and all the things I have mentioned are very well in their way, but they are both useless and dangerous when you have not got a complete and highly qualified *personnel* to use them when they are wanted: and I say therefore that Colonel Moody in bringing forward this paper at this present moment, when possibly in the immediate future not only your Army but your Navy and your Marines will require a very considerable accession of strength to its present force, has taken a most happy and most opportune step. I only trust that what he has already commenced will be taken up and dealt with, not merely by the soldier and those of us who are directly interested in this matter, as the comrades of soldiers and of sailors, but that the politicians and statesmen, and especially those men who guide more or less this country, the principal writers in the press, will give some little attention to this matter and educate the public that our great weakness at this present moment, looking at the enormous armies and the conditions of things on the Continent, is in not having a sufficiently large number of trained soldiers on our soil. We have had a good deal of discussion to-day about subjects which may perhaps appear to be trifles, but they are nevertheless of the greatest importance not only for the comfort and the contentment of the soldier, but also for attracting civilians into our ranks. I will not say more upon that point at the present moment as our time has been exhausted, but at the same time the name of one regiment upon the card of a gallant Officer who has addressed us puts me in mind of a circumstance that occurred when I visited a large Indian cantonment in 1878. I there saw a most beautiful regiment on parade, and afterwards the Colonel of the regiment said, "I will show you something still more interesting," and, pointing to two large rows of the usual type of an Indian prison, he said, "For months those doors have not been closed." Pointing to another building, a station hospital, he said, "During the same time that door has hardly opened to receive an inmate." That was the 1st Battalion of the 11th Regiment, and I believe that was the normal condition of that battalion for some time in India. I only mention this to show, where Officers are devoted to the interests of their men, what they can do to make a contented and happy regiment. There is one point to which I attach very great importance, but which I think the public mind has lost sight of during the late agitation with reference to our defences. The large expenditure of money which is involved in the construction of forts, or in building ships or guns, collects about it an enormous number of interests all ready to support an agitation of that kind; but when it comes to a question of recruiting, or getting up the *personnel* of the Army, which is after all a question of individual devotion or self-sacrifice by the soldier himself, there is not that amount of interest

taken in the subject which it really demands. The real defence of England and of the Empire is always to carry your hostilities on to foreign soil, and if you do not have a sufficient number of sailors and soldiers and marines, and of your first fighting line of regulars to support that, that defence of England will be disregarded and you will not be able to make it when the hour of trial comes. The traditional history of England which has made her great in the past has been that she has always been in a position to strike a blow outside her own territories, and that is the real key to the difficulty of the position which we must maintain. Among the many practical suggestions that have been made in this discussion, one of the most practical, made by one who spoke from intimate experience of the soldier and of the working of our system both in the Army and in the Militia, came from my old friend General McKay. He has pointed out to us that without any very great dislocation, or without any very great alteration of the present state of things, you have existing an organization at the present moment, the old constitution of the Militia of this country in association with the Volunteers working in harmony, which only requires a few men to set to work for its organization, and a very small judicious extension of expenditure in order to make it a powerful and effective English Army. I will not detain you long, but will ask you to allow me to tender Colonel Moody our thanks for the very interesting lecture that he has given us.

Appendix A.

Increase and Decrease of the Army reported during each Month of the Year 1883.[1]

—	Non-Commissioned Officers and Men—all Arms.												
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total since commencement of the Year.
Effectives on the 1st of the month.....	185,518	181,806	176,152	173,133	171,922	171,044	169,827	170,146	171,271	171,930	172,897	174,361	173,529 (1st Jan.) 1884.)
Increase.													
Recruits joined { Long service ..	104	87	149	104	122	127	220	195	149	206	138	141	1,742
Recruits joined { Short service ..	2,369	1,953	1,842	2,057	2,911	3,121	3,086	3,223	2,627	2,787	2,974	2,404	31,354
	2,473	2,040	1,991	2,161	3,033	3,248	3,306	3,418	2,776	2,993	3,112	2,545	33,096
Joined from desertion....	123	119	107	98	82	79	94	106	123	126	110	99	1,266
From Army Reserve...	2	3	7	6	9	2	5	..	1	1	3	..	39
Other causes[2].....	118	122	137	118	31	5	134	97	66	111	67	27	1,033
Total increase	2,716	2,284	2,242	2,383	3,155	3,334	3,539	3,621	2,966	3,231	3,292	2,671	35,434
Decrease.													
Dead.....	173	136	122	119	144	154	148	177	198	115	118	103	1,707
Discharged: After 21 years' service..	284	199	173	133	103	124	114	112	67	106	64	68	1,547

After 18 years' service under Art. 1,033, Royal Warrant, 25th June, 1881	..	2	5	2	2	2	5	7	13	6	4	4	52
On completing first period	964	865	493	344	324	540	500	274	127	140	117	209	4,897
As invalids	241	279	366	243	310	342	361	298	265	239	206	224	3,374
By purchase	156	162	231	220	183	183	169	171	176	151	147	159	2,108
Under Sec. 81, Army Act of 1881	122	102	98	101	91	104	128	154	155	181	139	130	1,505
Free by indulgence	25	31	39	33	38	52	126	160	120	92	68	34	818
On conviction of making a false answer on attestation	6	8	7	9	15	7	13	11	16	7	9	7	115
For misconduct	86	115	93	96	111	88	84	78	85	77	63	83	1,059
Miscellaneous	39	42	52	45	49	37	50	75	56	61	51	40	597
	1,923	1,805	1,557	1,226	1,226	1,479	1,550	1,340	1,080	1,060	868	958	16,072
Deserted	299	286	288	221	261	295	323	396	411	318	261	348	3,707
To Army Reserve:													
On completion of service	1,163	1,040	2,361	929	2,222	2,391	1,023	402	314	322	317	1,788	14,272
On conversion of service	..	1	4	54	10	13	14	3	87	231	124	172	713
On demobilization	2,530	4,328	700	853	62	30	7	15	7	4	4	3	8,543
To Auxiliary Forces	78	64	76	87	62	71	48	53	62	61	58	68	788
Given up as deserters	12	6	10	12	2	10	3	5	15	7	12	15	109
Other causes[2]	250	272	143	93	44	108	104	105	133	146	66	48	1,512
Total decrease	6,428	7,938	5,261	3,594	4,033	4,551	3,220	2,496	2,307	2,264	1,828	3,503	47,423
Net increase	..	..	..	..	..	..	319	1,125	659	967	1,464	..	..
Net decrease	3,712	5,654	3,019	1,211	878	1,217	..	..	..	..	..	832	11,989

[1] This Return is taken from the Annual Report of the Inspector-General of Recruiting.
[2] Principally interchanges between the different branches of the Service.

Appendix B.

Increase and Decrease of the Army reported during each Month of the Year 1884.[1]

	Non-Commissioned Officers and Men—all Arms.												
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total during the Year.
Effectives on the 1st of the month.....	173,529	174,155	174,346	173,914	174,007	174,066	173,857	174,459	175,313	176,565	178,668	180,534	181,008 (1st Jan. 1885.)
Increase.													
Recruits joined { Long service ..	147	160	175	114	146	150	106	117	122	165	178	149	1,729
Recruits joined { Short service ..	3,632	2,971	2,719	2,291	2,389	2,194	2,656	2,581	2,871	3,463	3,415	2,742	33,924
	3,779	3,131	2,894	2,405	2,535	2,344	2,762	2,698	2,993	3,628	3,593	2,891	35,653
Joined from desertion....	145	115	149	117	125	110	128	116	139	130	140	154	1,568
From Army Reserve ..	3	1	3	1	1	..	1	3	176	416	569	241	1,415
Other causes[2]	55	47	25	37	47	29	27	26	45	143	34	56	571
Total increase	3,982	3,294	3,071	2,560	2,708	2,483	2,918	2,843	3,353	4,317	4,336	3,342	39,207
Decrease.													
Dead.....	76	90	191	99	105	119	119	108	154	180	118	162	1,521
Discharged: After 21 years' service .	118	144	129	145	128	154	141	108	89	103	70	133	1,462

After 18 years' service under Art. 1,033, Royal Warrant, 25th June, 1881	2	4	2	5	2	4	7	1	4	4	..	..	35
On completing first period	227	251	319	232	150	207	170	102	81	150	129	232	2,250
As invalids	212	269	235	261	242	223	297	319	282	217	190	215	2,962
By purchase	155	181	237	134	147	181	166	148	144	138	100	121	1,852
Under Sec. 81, Army Act of 1881	173	142	177	158	143	138	132	134	117	132	167	138	1,751
Free by indulgence	64	116	110	88	80	139	62	59	55	27	33	38	871
On conviction of making a false answer on attestation	10	9	15	8	14	12	20	13	22	18	9	19	169
For misconduct	92	71	87	63	101	56	77	74	64	93	78	84	940
Miscellaneous	75	46	68	54	67	49	45	37	46	63	49	48	647
	1,128	1,233	1,379	1,148	1,074	1,163	1,117	995	904	945	825	1,028	12,939
Deserted	399	321	363	346	328	329	410	431	439	414	345	353	4,478
To Army Reserve:													
On completion of service	1,405	1,255	1,276	632	900	846	438	337	452	473	970	1,176	10,160
On conversion of service	231	58	111	112	105	116	107	21	43	42	71	15	1,032
On demobilization	3	..	..	..	..	1	1	..	1	..	1	..	7
To Auxiliary Forces	69	67	67	82	76	68	48	48	53	38	60	60	736
Given up as deserters	13	10	10	7	11	12	18	9	15	10	24	15	154
Other causes[2]	32	69	106	41	50	38	58	40	40	112	56	59	701
Total decrease	3,356	3,103	3,503	2,467	2,649	2,692	2,316	1,989	2,101	2,214	2,470	2,868	31,728
Net increase	626	191	..	93	59	..	602	854	1,252	2,103	1,866	474	7,479
Net decrease	..	..	432	..	..	209	..	..	..	..	..	..	..

[1] This Return is taken from the Annual Report of the Inspector-General of Recruiting.
[2] Principally interchanges between the different branches of the Service.

Appendix C.

State of the Army on the 1st January in each Year from 1880 to 1885, and the Increase and Decrease during the Year.[1]

—	1880.	1881.	1882.	1883.	1884.	1885.
State of the Army.						
Effectives on 1st January in each year	183,942	181,233	181,742	185,518	173,529	181,008
Establishments	180,673	181,325	179,989	185,044	181,156	183,731
Supernumerary	3,269	..	1,753	474	..	..
Wanting	..	92	..	..	7,627	2,723

—	During 1880.	During 1881.	During 1882.	During 1883.	During 1884.	Total for five years.
Increase and Decrease.						
Recruits joined	25,622	26,258	23,802	33,096	35,653	144,431
Waste (exclusive of transfers to Reserve).						
Deaths	3,186	2,570	2,140	1,707	1,521	11,124
Desertion (net loss)	3,276	3,041	2,846	2,441	2,910	14,514
Given up as deserters	243	141	130	109	154	777
Fraudulent enlisters struck off	168	..	..	..	..	168

Discharged—						
Purchase and free	3,868	3,753	3,857	4,431	4,474	20,383
Invalids	3,964	3,712	3,545	3,374	2,962	17,557
Completion of engagement	5,907	4,693	6,241	6,496	3,747	27,084
Misconduct	1,826	1,474	1,294	1,059	1,109	6,762
Other causes	301	577	675	712	647	2,912
	15,866	14,209	15,612	16,072	12,939	74,698
To Auxiliary Forces	..	253	675	788	736	2,452
Other causes	659	327	1,093 [2]	479	130	2,688
Total waste (exclusive of transfers to Reserve).	23,398	20,541	22,496	21,596	18,390	106,421
Gain by recruiting (exclusive of transfers to Reserve)	2,224	5,717	1,306	11,500	17,263	38,010
Transfers to Reserve	4,936	6,108	8,370	23,528 [4]	11,199	54,141
Retransfers from Reserve	3	900	10,840 [3]	39	1,415	13,197
Waste by transfer to Reserve	4,933	5,208	+2,470 [3]	23,489 [4]	9,784	40,944
Total increase or decrease of Army (including transfers to and from Reserve)	−2,709	+509	+3,776 [3]	−11,989 [4]	+7,479	−2,934

[1] This Return is taken from the Annual Report of the Inspector-General of Recruiting.
[2] Warrant officers struck off. [3] Army Reserve partially mobilized. [4] Including 8,543 retransferred on demobilization.

Appendix D.

Annual Increase and Decrease of the Royal Marines since the Year 1870.

Years.	Gain.				Loss.											Average strength of the Corps, N.C. officers, and rank and file.	Remarks.	Establishment.
					Discharged.													
	Ordinary recruits.	Drummers, &c.	Retaken from desertion.	Total gain.	Completed 21 years.	Completed 12 years.	By purchase.	Branded and objectionable.	Free, relinquishing pension.	Invalided.	Death.	Desertion.	Claim.	Transported and penal servitude.	Total loss.			
1870	1,224	29	49	1,303	100	122	60	95	8	468 (unfit 4)	197	215	21	1	1,291	13,491	4 to Naval Police	13,955.
1	1,125	26	58	1,209	60	210	66	56	21	473 (unfit 4)	101	160	31	1	1,183	13,629	3 do.	13,955.
2	1,590	52	73	1,715	132	136	161	90	34	655 (unfit 2)	86	246	67	1	1,610	13,721	14 do.	13,955.
3	1,595	38	91	1,724	161	162	191	67	18	562 (unfit 3)	93	408	88	1	1,754	13,736	4 do.	13,955 to 4 Aug., 1873, 13,965 after.
4	1,718	55	122	1,895	227	135	222	99	17	504 (unfit 11)	121	434	94	3	1,867	13,746	4 do.	13,965.
5	1,539	54	145	1,738	390	190	212	156	38	473 (unfit 7)	114	423	22	5	2,030	13,612	4 do. 12 to Reserve forces	13,965.
6	1,756	34	146	1,936	421	201	181	98	36	415 (unfit 2)	82	363	6	4	1,809	13,093	5 to Naval Police 8 to Reserves	13,965.
7	1,830	46	145	2,021	255	137	194	201	26	373 (unfit 1)	79	402	5	10	1,683	13,297	2 to Naval Police 5 to Reserves	13,965 to 1st October, 13,973 after.
8	1,229	38	122	1,389	183	174	214	247	51	485 (unfit 2)	92	307	2	3	1,760	13,294	20 to Naval Police 22 to Reserves	13,973.
9	980	20	102	1,102	254	185	200	361	23	618 (unfit 4)	74	234	...	1	1,954	12,603	12 to Naval Police 3 to Reserves	13,973 to 1st April, 13,000 after.
1880	1,568	41	96	1,705	434	39	240	166	21	515 (unfit 8)	85	265	5	3	1,781	12,322	10 to Naval Police 3 to Reserves	13,000.
1	1,255	15	66	1,336	319	77	239	200	27	489 (unfit 64)	80	280	11	1	1,723	12,299	5 to Naval Police 12 to Reserves	13,000 to 1st July, 12,405 after.
2	1,463	35	68	1,556	253	128	209	170	9	361 (unfit 64)	146	237	32	3	1,612	12,037	1 to Naval Police 3 to Reserves	12,405.
3	1,483	52	63	1,598	269	119	244	164	14	485 (unfit 49)	76	312	28	2	1,762	11,917	2 to Naval Police	12,405.
4	1,707	23	74	1,804	218	118	234	107	3	403	100	225	26	...	1,484	...	... ...	12,405.
												Miscellaneous ...			25			

APPENDIX E.

A Return showing the Number of Seamen and Boys borne in Her Majesty's Fleet (including First Reserve Ships and Tenders—late Co*guishing "Blue-jackets" (pure Seamen); also the Annual Waste of Men and the Numbers newly entered, &c.* (NOTE.—The change Ships took place on 1st April, 1870.)

From 1874-75 the crews of the Indian troop ships (1,200 voted) are included in this Return.

Year.	Numbers voted. — Seamen (including Officers).	Description.	SEAMEN. Numbers borne. Beginning of financial year (April 1).	Ending of financial year (March 31).	Difference *more* or less at end of financial year.	Average during the year.	Waste. Discharged from casualties.[1] Number.	Proportion on average numbers borne.	Paid off to the shore.[2]	Total. Number.	Proportion on average numbers borne.	Men raised. First entries.	Had served.	Rated from boys.	Total. Number.	Proportion on average numbers borne.	*More* or less raised than waste.
1870–71	34,430	All classes, without Officers	29,175	29,098	77	28,964	2,844	About $\frac{1}{10}$th	2,909	5,753	About $\frac{1}{5}$th	1,786	1,555	2,335	5,676	Less than $\frac{1}{5}$th	77
		Pure blue-jackets	18,335	18,026	309	18,147	1,813 (Actual)	$\frac{1}{10}$th	1,288	3,101	More than $\frac{1}{6}$th	83	402	2,307	2,792	Less than $\frac{1}{6}$th	309
							including 330 lost in "Captain" and "Slaney"										
							including 201 lost in "Captain" and "Slaney"										
1871–72	34,500	All classes, without Officers	29,098	28,737	361	29,001	2,460	About $\frac{1}{12}$th	2,480	4,940	About $\frac{1}{6}$th	1,335	1,151	2,093	4,579	Less than $\frac{1}{6}$th	361
		Pure blue-jackets	18,026	18,151	*125*	18,186	1,652 (Actual)	$\frac{1}{11}$th	812	2,464	Less than $\frac{1}{7}$th	169	345	2,075	2,589	About $\frac{1}{7}$th	*125*
1872–73	34,000	All classes, without Officers	28,737	28,697	40	28,385	2,785	$\frac{1}{10}$th	2,311	5,096	More than $\frac{1}{6}$th	1,268	1,071	2,717	5,056	More than $\frac{1}{6}$th	40
		Pure blue-jackets	18,151	18,383	*232*	18,000	1,935 (Actual)	About $\frac{1}{9}$th	912	2,847	Less than $\frac{1}{6}$th	113	269	2,697	3,079	About $\frac{1}{9}$th	*232*
1873–74	33,500	All classes, without Officers	28,697	29,055	*358*	28,763	3,001	About $\frac{1}{9}$th	2,456	5,457	Less than $\frac{1}{6}$th	1,796	954	3,065	5,815	More than $\frac{1}{6}$th	*358*
		Pure blue-jackets	18,383	18,878	*495*	18,496	2,134 (Actual)	More than $\frac{1}{9}$th	746	2,880	Less than $\frac{1}{6}$th	88	248	3,039	3,375	More than $\frac{1}{9}$th	*495*
1874–75	34,695	All classes, without Officers	30,087	30,558	*471*	29,963	3,279	About $\frac{1}{9}$th	2,282	5,561	Less than $\frac{1}{6}$th	1,962	1,292	2,778	6,032	More than $\frac{1}{6}$th	*471*
		Pure blue-jackets	19,343	19,558	*215*	19,187	2,294 (Actual)	Less than $\frac{1}{8}$th	734	3,028	Less than $\frac{1}{6}$th	82	411	2,750	3,243	More than $\frac{1}{6}$th	*215*
1875–76	34,695	All classes, without Officers	30,558	30,759	*201*	30,340	3,050	About $\frac{1}{10}$th	2,335	5,385	More than $\frac{1}{6}$th	1,872	1,170	2,544	5,586	More than $\frac{1}{6}$th	*201*
		Pure blue-jackets	19,558	19,586	*28*	19,381	2,107	About $\frac{1}{9}$th	829	2,936	More than $\frac{1}{7}$th	64	387	2,513	2,964	More than $\frac{1}{7}$th	*28*
1876–77	34,695	All classes, without Officers	30,759	31,040	*281*	30,992	2,686	About $\frac{1}{11}$th	2,066	4,752	Less than $\frac{1}{6}$th	1,602	1,075	2,356	5,033	About $\frac{1}{6}$th	*281*
		Pure blue-jackets	19,586	19,514	72	19,703	1,763	About $\frac{1}{11}$th	1,051	2,814	About $\frac{1}{7}$th	80	341	2,321	2,742	About $\frac{1}{7}$th	72
1877–78	35,395	All classes, without Officers	31,040	32,016	*976*	31,498	2,931	About $\frac{1}{11}$th	2,163	5,094	Less than $\frac{1}{6}$th	2,191	1,480	2,399	6,070	Less than $\frac{1}{6}$th	*976*
		Pure blue-jackets	19,514	19,771	*257*	19,782	1,999	About $\frac{1}{10}$th	602	2,601	More than $\frac{1}{8}$th	68	428	2,362	2,858	More than $\frac{1}{7}$th	*257*
1878–79	35,395	All classes, without Officers	32,016	33,101	*1,085*	32,881	2,606	More than $\frac{1}{13}$th	2,293	4,899	About $\frac{1}{7}$th	2,129	1,433	2,422	5,984	Less than $\frac{1}{6}$th	*1,085*
		Pure blue-jackets	20,171 A	20,707	*536*	20,442	1,676	Less than $\frac{1}{12}$th	632	2,308	About $\frac{1}{9}$th	75	407	2,362	2,844	About $\frac{1}{7}$th	*536*
1879–80	36,345	All classes, without Officers	33,101	32,807	294	32,578	2,727	About $\frac{1}{12}$th	2,740	5,467	About $\frac{1}{6}$th	1,655	1,460	2,058	5,173	Less than $\frac{1}{6}$th	294
		Pure blue-jackets	20,707	20,536	171	20,414	1,731	More than $\frac{1}{12}$th	937	2,668	More than $\frac{1}{8}$th	77	420	2,000	2,497	Less than $\frac{1}{8}$th	171
1880–81	36,895	All classes, without Officers	32,807	32,764	43	32,463	2,670	About $\frac{1}{12}$th	2,647	5,317	Less than $\frac{1}{6}$th	2,043	1,397	1,834	5,274	Less than $\frac{1}{6}$th	43
		Pure blue-jackets	20,536	19,917	619	20,019	1,791	About $\frac{1}{11}$th	1,038	2,829	About $\frac{1}{7}$th	62	353	1,795	2,210	About $\frac{1}{9}$th	619
1881–82	36,395	All classes, without Officers	32,764	31,712	1,052	31,929	2,722	More than $\frac{1}{12}$th	2,710	5,432	About $\frac{1}{6}$th	1,188	1,400	1,792	4,380	Less than $\frac{1}{6}$th	1,052
		Pure blue-jackets	19,430 A	18,930	500	19,087	1,745	About $\frac{1}{11}$th	977	2,722	About $\frac{1}{7}$th	52	398	1,772	2,222	More than $\frac{1}{9}$th	500
1882–83	36,296	All classes, without Officers	31,712	31,530	182	31,679	2,973	More than $\frac{1}{11}$th	2,172	5,145	Less than $\frac{1}{6}$th	1,802	1,492	1,669	4,963	Less than $\frac{1}{6}$th	182
		Pure blue-jackets	18,930	18,548	382	18,720	1,904	More than $\frac{1}{10}$th	551	2,455	More than $\frac{1}{8}$th	47	389	1,637	2,073	About $\frac{1}{9}$th	382

[1] The casualties comprise all deaths, invalidings, desertions, discharges with disgrace, by purchase, and on pension.

[2] The head "Paid off to the shore" includes all men discharged to the shore on their ships being paid off, or at any other time, by "request," as "objectionable," or for "incompetency," as promoted to the rank of warrant officer.

A. The number of blue-jackets was reduced from 19,917 on 31st March, 1881, to 19,430 on 1st April, 1881, by the transfer of 487 masters-at-arms and ship's corporals to the Non-Seamen clas

APPENDIX E.

First Reserve Ships and Tenders—late Coast Guard Afloat) *in each of the undermentioned Years, distin-newly entered, &c.* (NOTE.—The change in the designation of the Coast Guard Afloat to First Reserve

Men raised.						BOYS.								
								Waste.					Boys entered.	
			Total.						Rated seamen.		Total.			
First entries.	Had served.	Rated from boys.	Number.	Proportion on average numbers borne.	*More* or less raised than waste.	Numbers voted.	Numbers borne. — Average during the year.	Discharged from casualties.[1]	Number.	Proportion on average number of boys borne.	Number.	Proportion on average number of boys borne.	Number.	*More* or less entered than waste.
1,786	1,555	2,335	5,676	Less than $\frac{1}{3}$th	77	7,000	6,957	636	2,335	$\frac{1}{3}$rd	2,971	More than $\frac{1}{3}$rd	3,295	*324*
83	402	2,307	2,792	Less than $\frac{1}{6}$th	309		6,872 As above	633 including 57 lost in "Captain"	2,307	$\frac{1}{3}$rd	2,940	Less than $\frac{1}{2}$	3,279 As above	*339*
1,335	1,151	2,093	4,579	Less than $\frac{1}{6}$th	361	7,000	7,404	507	2,093	More than $\frac{1}{4}$th	2,600	More than $\frac{1}{3}$rd	3,187	*587*
169	345	2,075	2,589	About $\frac{1}{7}$th	*125*		7,338 As above	503	2,075	More than $\frac{1}{4}$th	2,578	More than $\frac{1}{3}$rd	3,179 As above	*601*
1,268	1,071	2,717	5,056	More than $\frac{1}{4}$th	40	7,500	7,679	633	2,717	More than $\frac{1}{3}$rd	3,350	Less than $\frac{1}{2}$	2,951	399
113	269	2,697	3,079	About $\frac{1}{6}$th	*232*		7,620 As above	627	2,697	More than $\frac{1}{3}$rd	3,324	Less than $\frac{1}{2}$	2,929 As above	395
1,796	954	3,065	5,815	More than $\frac{1}{3}$th	*358*	7,000	6,977	581	3,065	Less than $\frac{1}{2}$	3,646	More than $\frac{1}{2}$	2,918	728
88	248	3,039	3,375	More than $\frac{1}{6}$th	*495*		6,918 As above	577	3,039	Less than $\frac{1}{2}$	3,616	More than $\frac{1}{2}$	2,897 As above	719
1,962	1,292	2,778	6,032	More than $\frac{1}{3}$th	*471*	7,005	6,357	551	2,778	Less than $\frac{1}{2}$	3,329	More than $\frac{1}{2}$	3,079	250
82	411	2,750	3,243	More than $\frac{1}{6}$th	*215*		6,288	549	2,750	Less than $\frac{1}{2}$	3,299	More than $\frac{1}{2}$	3,039	260
1,872	1,170	2,544	5,586	More than $\frac{1}{3}$th	*201*	7,005	6,214	521	2,544	More than $\frac{1}{3}$rd	3,065	About $\frac{1}{2}$	2,876	189
64	387	2,513	2,964	More than $\frac{1}{7}$th	*28*		6,136	511	2,513	More than $\frac{1}{3}$rd	3,024	About $\frac{1}{2}$	2,853	171
1,602	1,075	2,356	5,033	About $\frac{1}{6}$th	*281*	7,005	6,311	571	2,356	More than $\frac{1}{3}$rd	2,927	About $\frac{1}{2}$	3,040	*113*
80	341	2,321	2,742	About $\frac{1}{7}$th	72		6,217	569	2,321	More than $\frac{1}{3}$rd	2,890	About $\frac{1}{2}$	3,004	*114*
2,191	1,480	2,399	6,070	Less than $\frac{1}{3}$th	*976*	6,305	5,955	524	2,399	About $\frac{2}{3}$ths	2,923	About $\frac{1}{2}$	2,634	289
68	428	2,362	2,858	More than $\frac{1}{7}$th	*257*		5,859	523	2,362	About $\frac{2}{3}$ths	2,885	About $\frac{1}{2}$	2,571	314
2,129	1,433	2,422	5,984	Less than $\frac{1}{3}$th	*1,085*	6,305	5,383	490	2,422	Less than $\frac{1}{2}$	2,912	More than $\frac{1}{2}$	1,819	1,093
75	407	2,362	2,844	About $\frac{1}{3}$th	*536*		5,248	484	2,362	Less than $\frac{1}{2}$	2,846	About $\frac{1}{2}$	1,776	1,070
1,655	1,460	2,058	5,173	Less than $\frac{1}{6}$th	294	5,305	4,914	411	2,058	About $\frac{2}{3}$ths	2,469	About $\frac{1}{2}$	2,460	9
77	420	2,000	2,497	Less than $\frac{1}{5}$th	171		4,776	406	2,000	More than $\frac{2}{3}$ths	2,406	About $\frac{1}{2}$	2,392	14
2,043	1,397	1,834	5,274	Less than $\frac{1}{3}$th	43	4,905	4,644	391	1,834	About $\frac{2}{3}$ths	2,225	About $\frac{1}{2}$	2,369	*144*
62	353	1,795	2,210	About $\frac{1}{5}$th	619		4,544	387	1,795	About $\frac{2}{3}$ths	2,182	About $\frac{1}{2}$	2,318	*136*
1,188	1,400	1,792	4,380	Less than $\frac{1}{3}$th	1,052	4,705	4,694	458	1,792	Less than $\frac{2}{3}$ths	2,250	About $\frac{1}{2}$	2,242	8
52	398	1,772	2,222	More than $\frac{1}{5}$th	500		4,642	458	1,772	Less than $\frac{2}{3}$ths	2,230	Less than $\frac{1}{2}$	2,184	46
1,802	1,492	1,669	4,963	Less than $\frac{1}{6}$th	182	4,804	4,978	370	1,669	About $\frac{1}{3}$rd	2,039	More than $\frac{2}{3}$ths	2,169	*130*
47	389	1,637	2,073	About $\frac{1}{5}$th	382		4,881	361	1,637	About $\frac{1}{3}$rd	1,998	More than $\frac{2}{3}$ths	2,075	*77*

y "request," as "objectionable," or for "incompetency," as well as the men who join the Coast Guard on shore from the fleet, and also men

asters-at-arms and ship's corporals to the Non-Seamen class.

Friday, April 17, 1885.

COLONEL THE RT. HON. THE EARL OF WEMYSS, A.D.C., Hon. Colonel 7th Middlesex Rifle Volunteer Corps, in the Chair.

DISCUSSION ON THE PAPER BY LIEUT.-GENERAL SIR EDWARD HAMLEY, K.C.B., ON "THE VOLUNTEERS IN TIME OF NEED," IN THE "NINETEENTH CENTURY" FOR MARCH, 1885.

Sir EDWARD HAMLEY: Most of you are no doubt aware that the paper I am about to read has been for some little time before the public. I wrote it in the hope of drawing attention to a subject which seems to me to be of the highest importance, namely, how to render efficient the force which was created expressly to defend these shores. I thought it might perhaps be deemed of national interest, especially at a crisis like this, since we may be about to enter upon a great war with absolutely nothing to rely on except our own right hand. I confess I have been somewhat disappointed to find the subject so little noticed. Some of the daily organs of the press have discussed it, but I believe the greater number have ignored it. Nevertheless, the Council of this Institution deem it of such importance that they wish to hear it discussed by those who are best qualified to deal with it. I am delighted to see so good an attendance; I hope it means that we are about to listen to valuable suggestions and to receive information about important details. For myself I have nothing to add to what I have written, and my part therefore, after reading the paper, will be merely that of a highly interested listener, expecting that if there is anything which I have failed to make clear I shall be very happy to afford explanation.

Exception has been taken to a passage on the Corps of Engineer and Railway Transport Volunteers by Mr. Archibald Forbes, who points out that twelve of the members of this corps are actually general managers of the lines they represent, and that consequently they would be entrusted with the execution of the project. So far that is exceedingly satisfactory,—they are in larger numbers than I had supposed. Still every manager of a company is not a member of this corps, for instance, that very important personage the general manager of the South Western is not a member. Consequently the rule laid down by Mr. Forbes that the corps should be entrusted absolutely with the execution of the measures is not so correct as a general rule as the one I have laid down, which says that I would entrust the plans to the railway officials on whom the actual execution will devolve. However, this is not a matter of any particular importance; it is only important that it should be in the right hands.

General Hamley then read the paper.

In the absence of the paper (which for various reasons cannot be given in full) extracts from it have been found necessary in order to render the discussion intelligible.

The article begins with a description of the constitution of the Volunteer Force, which ends thus (p. 410) :—

"The Volunteers are not left altogether without assistance from the public to defray their necessary expenses. An annual allowance of 1*l.* 10*s.* is granted for every efficient Volunteer Officer (who has attended a prescribed number of drills) and man, with a special additional allowance of 2*l.* 10*s.* on account of each Volunteer Officer or sergeant who holds a certificate of proficiency; and a special allow-

ance of 10*s.* for every Officer who has passed in the year the examination in tactics is granted for that year only. These sums go the general fund.

"Travelling expenses on a fixed scale are granted where companies attend drill at stations more than 5 miles from the headquarters of the corps, and artillery corps receive extra allowances for conveyance of guns, or other expenses incidental to gun practice. Officers receive travelling allowance when on military duty.

"Every company or battery receives 4*l.* a year for postage and stationery. Army forms and books are supplied at the public expense, and also regulations, and manuals of instruction and exercise.

"The artillery corps from their own funds provide the sites of batteries, obtain leases of them, throw up the earthworks, provide accommodation for a resident gunner to take charge of each, and pay for keeping them in repair. The Government provides side-arm sheds and expense magazines.

"Every corps is expected to provide a secure place for the custody of its small-arm ammunition, unless it can be placed in charge of Ordnance Store Officers in Government buildings.

"Every Volunteer receives a rifle, belt, and pouch. These they for the most part take with them to their homes. The Snider, hitherto their weapon, is being exchanged for the Martini-Henry."

The present rifle practice is thus remarked on (p. 411):—

"Not less essential than training in movements is practice in shooting. At present all Volunteers use a range, where it is obtainable, up to 800 yards. But this is very far beyond what is desirable for the majority. The number of men who can ever make good shooting at long ranges is small, and much time and ammunition are thrown away. It would probably have an excellent effect to limit the practice of all but those likely to be fine marksmen to 300 yards, at which range the sight of the rifle need not be elevated. By firing all their ammunition at ranges not exceeding this, the Volunteer line would pour in an unusually effective fire at the distance practically adapted to the ordinary conditions of the battle-field; while the superior shots of each company should be specially trained at Hythe, and would find in a campaign plenty of opportunities for the exercise of their skill."

A general scheme is then set forth containing the following points which were afterwards discussed (p. 412):—

"In the first place, it is evident that to assemble the Volunteer corps, rifle in hand, at their different headquarters, is only a first step towards meeting the enemy. They must be able to march, to encamp, to remain for any requisite time in positions where large bodies could no longer rely on the railways for supply; they must have haversacks, water-bottles, knapsacks, mess-tins, and cartridges; they must be accompanied by tents, provisions, ambulances, and ammunition. Where are these to come from? Can anybody indicate even the sources from which all these supplies could, with sufficient promptitude, be drawn? But to indicate the sources would be going only a very small way to the end. For how would this vast quantity of equipment, even if stored in existing depôts, be made available for the troops? To be ready for immediate use on an emergency the personal equipment must be stored at the headquarters of corps."

"Magazines of ammunition should be formed at strategical points, that is to say, at points from whence their contents could be at once directed on several possible lines of invasion; and depôts of all that is necessary for the maintenance of armies in movement or in the field should also be established at these points. Without all these, the spectacle of the Volunteers assembled by battalions and corps at their own 178 headquarters all over the kingdom, waiting for all this indispensable material to be manufactured, collected, and conveyed, would be of itself sufficient to cause a general panic. The first step, then, towards making the Volunteers a competent army is to create stores of personal equipment at all these headquarters for every man, and more than every man, in the regimental district, and to construct and fill the necessary depôts and magazines on all possible lines of invasion. These last, which need not amount to a great number, must be duly protected, and placed in charge of officials capable of directing the issue."

"The whole area between the coast and the capital, divided into possible theatres of operations, must be carefully reconnoitred, and all its military features thoroughly recognized. The first position in each case should be as near the coast as possible. It might not, indeed almost certainly would not, be practicable to assemble a force sufficient to oppose a landing covered by the guns of the enemy's fleet, since there are so many places where demonstrations might be made in order to render the real point doubtful. But, the position selected, the movement of all the field troops in the district, of all kinds and all arms, upon that position should be laid down, and every march by road or rail, every order for the transfer from the depôts and magazines of the necessary material, should be anticipated. And as it might very well happen that a concentration on this first position might not be possible in view of the more rapid concentration of the invaders, the lines of movement on the next position should in the same way be calculated" (p. 414).

"It should be confided to an experienced Officer or Officers, assisted by a considerable permanent staff composed of trained members of the Quartermaster-General's Department, Staff College Officers, Engineer Officers, and draughtsmen, and they should proceed with all possible despatch" (p. 415).

"All these considerations, however, are secondary compared with the step I would advocate—namely, that, when these schemes for defence are once finally settled, all the auxiliary forces should substitute for some ordinary drill a rehearsal on the ground of what they would actually do in time of war; that they should form camps near the places where they would be posted; should occupy in order of battle the line of the position; should see every outpost and every sentry posted—till there was not a company in the kingdom of the counties along the coast which would not have had the meaning of its existence vividly impressed on it by knowing its own place and its own part in the defence of its own locality. This would be infinitely more practical and more interesting than the ordinary autumn manœuvres; and it would cost nothing more than the present exercises of the Militia and Volunteers, except in compensation for any damages to fences, &c. By-and-bye some autumn bank-holiday might be substituted for the Easter Monday, and all the forces of at least the eastern and southern sections of the country, Militia, Volunteers, and Regulars, might be assembled at once as defensive armies. What foreigners would chiefly learn from contemplating this would be the useful lesson that we were thoroughly preparing ourselves for a strong defence."

"The theory, I believe, is that the field army would be formed of the territorial corps—that is, such line battalions as may be at home, or their depôts, and Militia, reinforced by the Army and Militia Reserves; and that the garrison duties should be taken by Volunteers, whose primary function would of course be to guard the coasts of their own counties. Happily, their number is far in excess of that required for our fortified ports and posts, and a very large proportion of these valuable troops would go to augment the field army. But it is none the less expedient to assign at once to the Auxiliary Forces, whose headquarters are at or near posts of which they might form the garrisons, the duties which would devolve upon them. For instance, the 2nd and 3rd Hampshire Rifle Volunteers have their headquarters at Southampton and Portsmouth, they number together about 2,200 efficients; the 1st Hampshire Volunteer Artillery is 1,270 strong. Supposing these might constitute suitable garrisons for four of the forts on Portsdown Hill, I would suggest that these troops should be enabled to substitute for some of their battalion and battery drills a rehearsal of the garrison duties, taking over a fort from the present garrison for the day, the Rifles manning the defences and furnishing the guards, and the Artillery taking post in the batteries. It is especially necessary that these last troops should be exercised with the identical guns which they would serve when called out. Acquaintance with the exact weapon, projectile, ammunition, and equipment is, in these days of complicated engines of war, indispensable to making use of them at all; while the confusion of gun detachments which, called suddenly to man the batteries, would have to learn where to look for all the necessary stores, need not be described. The Isle of Wight Rifle Volunteers number 670, and should be appropriated in a similar way to that section of the coast defences which is nearest their headquarters. The Devonshire and the Cornish Rifle battalions, seven in all, number nearly 6,000 men; the three Artillery corps of these counties

amount to near 2,000; and these might be at once assigned to take up, in due proportion, the defences of Plymouth, conveyance by rail being given, with other allowances, whenever the more distant corps can find a day for the purpose. It would not be necessary that entire battalions or corps should take up the work together on other than special occasions. When every part of these knows its own place, it may proceed to exercise in its own part of the works, or its own battery, whenever an opportunity is found for the assembly of its members. I use examples only to give point to the suggestion. The consideration of an entire scheme might, of course, lead to modifications; but I think the soundness of the principle of making the men acquainted with their special duties cannot be disputed" (pp. 416, 417).

"We have some 8,000 Yeomanry who might do excellent service—not perhaps in manœuvring against and encountering regular cavalry, for which the time they can give to training must be all too little to fit them, but in orderly, escort, and outpost duties. But beside these services, I believe they might play a highly important part if they were trained as mounted riflemen. Many years ago I published the opinion that such a force might at a small cost produce great results. I am told that a prejudice exists on the part of at least some portion of the force to being trained in this way. But I believe that fuller knowledge would remove this. I do not now consider the subject for the first time, and continue to believe that the nature of the service would render it especially popular with the active, the enterprising, and ambitious. Men like Sir Herbert Stewart—an admirable horseman and full of dash—would make ideal commanders of bodies of these, which, under such leading, would neutralize greatly superior forces of the enemy, and might be expected to deal strokes of the most decisive effect. I can hardly doubt, therefore, that if the Yeomanry were trained as mounted infantry they would add immensely to their value as a national force."

"Again, the enemy's march would be accompanied only by field artillery; the difficulties of horsing and moving heavier guns would be too great for him. Our guns of position—that is to say, guns of larger calibre than field artillery mounted on travelling carriages—would be of immense advantage in a pitched battle. Batteries of 40-prs., placed on commanding ground, would defeat what must be the first endeavour of the enemy, namely, to crush our artillery with his own before launching his infantry to the attack. An artillery duel is almost of necessity a prelude to a general action, and it may be said that if the assailant fails in it he has but small chance of gaining the day. It would be a most important step accomplished, therefore, to complete the step already in progress, of giving these guns, with their full equipment, as soon as possible into the charge of the Artillery Volunteer corps, who would use them in action, so that they might be thoroughly practised in the service of this kind of ordnance. Sheds should be built for the guns, stores for their equipment, and magazines for their ammunition near the destined places of the batteries in the line of battle, which places they should be made to occupy on days of specially complete exercise. We possess, I believe, a practically unlimited number of these guns, so that, supposing a sufficient number to be (and a large number are) on travelling carriages, all the Volunteer and Militia Artillery available for the field army might be supplied with them. The position thus armed, the more mobile field artillery of the Regular Army would be disposable to augment the fire of the front or to manœuvre, and an invader must be greatly superior in other ways to contend with success against such a preponderance of artillery."

"The general scheme of preparation would include a register of all the means of transport in the form of horses, wagons, and carts in the various localities, and the assignment of these to what would be their special duties, and to the troops which each part of them would accompany in the field" (pp. 418, 419).

"I would therefore propose the practicable and, to my mind, every way preferable course of designing a line of positions round London. Taking at first the most vulnerable sides, this line might start from Claybury Hill, in Essex on the Roding, to the Thames about Barking; thence, south of the Thames, following either the line marked by the heights of Plumstead and Shooter's Hill, to Bromley; or, if it were judged necessary to preserve Woolwich from the chances of fire, the more forward front of Erith, Bexley, Chislehurst, Bromley, and on by Beckenham, Upper Norwood, and Wimbledon to Kingston Hill, from whence the Thames would be the

front of defence to Kew; thence, north of the river by Acton, Willesden, Muswell Hill, Tottenham, Woodford, to the completion of the circuit at Claybury. Within this circuit, of some fifty miles in extent, positions must be chosen, each including a group of roads leading upon the capital from a possible landing place. Now it is not to be supposed that London would ever be attacked all round at once. The troops of the sides unattacked—presumably the northern and western—would therefore be available as reserves to the rest. On this basis 60,000 men might defend London. It is essential that the troops appropriated to this service should have their headquarters within, or very little outside, the circle of defence. Let us see what proportion of this number is made up by corps now existing who fulfil this condition" (p. 420).



"Returning to the general subject, it is observable that the Volunteers are not always most numerous where most needed. Thus in Scotland there are 45,000, and in the Midlands of England more than 20,000. This, however, would suit the general scheme very well, for this last-named 20,000 could join the field army as the reserve of the battle-field; and the routes of all its corps, from their points of assembly to their places in the rear of each position of the field army, should be laid down. Scotland would certainly be able to reinforce this reserve with 10,000 men, while continuing to guard her own ports and coasts. But a more serious feature of the case is, that the counties most exposed to attack are very far from being the strongest in the numbers of their Volunteers. While Manchester, for instance, supplies nearly 8,000 and Derbyshire 3,500, Essex has only four battalions, two of which have been assigned in this scheme to the defence of London, while the others would be needed for the forts on the Thames; the East Kent corps at Woolwich and Blackheath would also be needed for river defence, leaving only the 2,100 West Kent for the field in that great and exposed county; Sussex has only 1,600, while the Hampshire force would only serve to man a few of the works of Portsmouth. I would therefore point out the expediency of increasing the Volunteers of Essex, Kent, Sussex, Hampshire, and Surrey (most of the Surrey corps are in London) till each should make up its quota of the field army to at least 5,000; that is to say, that the total additional numbers contributed by those five counties should be, say, 22,000" (p. 422).

"The strategically placed magazine and store centres might be thus assigned: North of the Thames at Willesden, Highgate Junction, and Stratford in Essex; south of the Thames at Wimbledon, Croydon, Woolwich, and Chatham. Plenty of accommodation exists at the two last-named places; there would thus be five centres to provide for. Each of these should have a magazine to hold 300 rounds for 60 guns, with a shell store, and a store for field equipment, as tents, &c. To lease the site, and construct these buildings, may be estimated at 25,000*l.* a centre—

125,000*l.* in all. Small magazines, gun-sheds, and drill-sheds at such headquarters of corps as do not already possess them, say 100,000*l.* Still better, perhaps, might it be to rent existing buildings for the purpose. A year's work on the general plan of defence (and a year might go far to finish it), with a staff of thirty to forty Officers and a sufficiency of draughtsmen, might cost 25,000*l.*; total, in round numbers, 800,000*l.* Thus a grant of a million would leave a large margin with which to indulge any liberality towards the force that might seem most expedient" (p. 423).

The CHAIRMAN: In inviting those present to take a part in discussing this very able paper, for which we are very much indebted to Sir Edward Hamley, I have to mention that he thought that if the discussion had no guide further than his general paper, which touches upon so many points, it might rather wander, and therefore with a view of fixing the discussion he has drawn up the following headings:—

1. At what ranges it would be expedient that the Volunteers should chiefly practise (p. 411).
2. How the proposal (p. 416) to exercise the Volunteers in the occupation of positions, and in garrison duties in fortresses, might best be regimentally put in practice.
3. Whether it would be expedient and practicable to have a considerable force of Volunteer Mounted Infantry, supposing the necessary funds to be forthcoming.
4. The effect of giving guns of position into the charge of Volunteer Artillery Corps, and how the security of guns and stores should be provided for.
5. Best way of raising additional Volunteers for the proposed defence of London (p. 431).
6. Best way of increasing the Volunteers in those counties where most needed; whether by extending the term of service, or by re-enrolment of past men, or both (p. 422).
7. Supposing increased funds to be available, how to apply them to most practical advantage.

Colonel Sir HENRY FLETCHER, 2nd Sussex Rifle Volunteers, M.P.: As one of the oldest Volunteers in the Force I beg leave to thank Sir Edward Hamley for the very kind way in which he has brought forward matters connected with the Force we are all so proud of. We are greatly indebted to him for his article in the "Nineteenth Century," and for the great trouble which he has taken in getting possession of facts connected with our force. I have had the honour of serving ever since 1859, and I confess that at first for many years it was a very uphill game indeed. We got very little support from the military authorities, but still we went on year by year working for ourselves in the best way we could. I think after some years the authorities and the Government began to see that we were not altogether a body of shopkeepers, but that we intended to prove ourselves thorough and efficient soldiers. We have now got a force of something like 214,000 men, but it is not only that force which we can depend upon. There are many men who have left the ranks who will, I trust, be perfectly willing to come back again if there is any occasion for their services, and I believe we can bring back into the ranks something like 800,000 men who have served and would serve should necessity arise. With reference to the first question, I quite agree with my friend Sir Edward Hamley that it is no use wasting ammunition and going to fire at extremely long ranges. We should make our men as efficient as possible at 300, but we certainly ought not to go beyond 500 yards. There is one thing in connection with these ranges which will have to be looked to. We have at last had served out to us the Martini-Henry, a point that I have fought for in the House of Commons for years past. There are many ranges throughout the country which were perfectly efficient for the Snider, but those ranges will now have to be altered to meet the requirements of the Martini-Henry, which carries a very much longer distance. As regards the second point, there is no doubt that the Volunteers are perfectly ready and willing at this moment, if the necessity requires it, to go into garrison duties. Many regiments have already volunteered to perform certain

garrison duties if they are asked to do so, and though other regiments have not already sent in their names, I feel sure that with the good spirit which exists amongst them, you could get any amount of men who would go for several days, say for a week at a time, out of a regiment to fulfil garrison duties if required. With regard to the force of mounted infantry, that is a question of money. There are one or two regiments which have been allowed during the past year or two to form a company of mounted infantry. One is in Cornwall, commanded by my friend Lord Mount Edgecumbe, and also the Victoria Rifles in London. It is simply a question of expense. I am told that it costs a man who becomes a member of a company of mounted infantry something like 7*l.* 10*s.* for his equipment. That is no doubt a very large sum, but if the Government would come forward and help us in that respect I think that in many counties we might get a very important body of mounted infantry, who would be a most valuable addition to the Volunteer Force. With regard to the "best way of increasing the Volunteers in those counties where most needed," Sir Edward Hamley has alluded to my own county of Sussex, where I have the honour of commanding one of the regiments, as being very short in numbers. I have used my best endeavours, though my regiment is small in numbers, to make it most efficient in every way. I have kept up a certain standard of chest measurement, which I think is a very important thing, but I have no doubt if I lowered my standard and made other alterations I could get a much larger number of men, and so it could be done in other counties. But I think the important thing in country corps is to have discipline, and to have a body of men whom you can rely upon to do a hard day's work. It is no good having weakly and sickly men in your ranks, but I feel sure that now that the Volunteer Force has been brought so prominently forward, and especially after the discussion which has been opened to-day, many men will come back into the ranks who have retired during the past few years. One thing we must ask of Her Majesty's Government, that is, to give us a little addition in the way of funds to help us along. I have urged in the Army Estimates for some years past that the capitation grant should be increased by 10*s.* per head—that would give us a great deal. I have also urged that great coats should be allowed us. We have neither great coats, water-bottles, nor leggings. The answer I get is, "Ah, but you know what great coats cost and what it will cost the country." My reply has always been, "We have a Volunteer Force of 200,000 men that you could rely upon, and why cast away, for the sake of a comparatively small sum of money as regards great coats, the efficiency of such a body of men?" Then it is said, "How are they to be kept?" My reply has been, "Keep them in store where you keep your rifles at headquarters, and only serve them out when the men go to battalion drill or on any emergency." I do trust Her Majesty's authorities will now see more fully the usefulness of the Volunteer Force of which I have had the honour of being a member for twenty-six years.

Lieutenant-Colonel R. W. ROUTLEDGE, 2nd Volunteer Battalion Royal Fusiliers: The first proposition placed before us is one on which I have always held rather strong opinions. I have been told I have not sufficient sympathy with the best shots at very long ranges. I beg to differ from that entirely. First-class shots are men with whom I have the highest possible sympathy, and the only thing I regret is that there are not ten or twenty times as many of them. But while amongst our Volunteers we have a great many very good shots, unluckily we have a great many very bad ones—men who know nothing about the theory of musketry and have very few opportunities of practising it, and those are the men for whom we must first attempt to legislate. I am of Sir Edward Hamley's opinion that until we can get our men to shoot well up to 300 yards we should not practise them at longer ranges. And I would go further than that. Recruits are allowed to shoot at short ranges, 100 to 200 yards. Having qualified in that they have to shoot the next year up to 300. There a great many fail, and when they do fail I would rather take these men back again to 100 and 200 before they again fire at 300 yards. I would even go further back than that; if you cannot get a man to depend upon hitting the target at 100 yards, take him back to 75 or even 50. Make him first of all confident that he can hit the target, and then practise him at slightly longer ranges, and eventually you may make a good shot of him. We have so many bad shots that no trouble should be spared in endeavouring to make

them hit the target at, say, short ranges, and then practise them at gradually increasing ones. The question with reference to garrison duties is a very important one, but is somewhat difficult to deal with. I have no doubt most regiments could get a certain number of men for a certain time to occupy and garrison various positions in the neighbourhood of headquarters, but I do not approve of the action of some Commanding Officers who have tendered the services of the whole of their battalion for garrison or any other duty. No doubt it would be very expedient and practicable to have a considerable force of volunteer mounted infantry, but, as Sir Henry Fletcher says, that really turns upon the question of expense. It is utterly impossible to carry it to any great extent. Two or three regiments have already formed mounted corps, one of which (the Victoria Rifles) was attached to a marching column I commanded at Easter, 1884, and conducted the work very well. Every encouragement should be held out to these regiments, but at the same time we should rely to a very great extent on the Yeomanry to perform that service. The "best way of raising additional Volunteers for the proposed defences of London" is a somewhat difficult question, because a very large number are wanted to supply Sir Edward Hamley's estimate. A great number of men join every year, but there would be a certain amount of difficulty in doubling that number. I think probably one of the means best calculated to bring that about is the fact that this very important paper has appeared, and that this meeting is held to-day. It will probably draw such attention to the great value of the Volunteers when certain suggestions are adopted, that there will be less difficulty in raising more men than there otherwise would have been. I do not quite understand what is meant by "extending the term of service." The engagement of every Volunteer with the Government on the regular War Office form is that he can always resign by giving fourteen days' notice. Practically there is no period of service. We all know there is a private arrangement between Commanding Officers and recruits by which each man pledges himself to serve for a certain number of years, or, failing to do that, he can retire on fourteen days' notice, in which case he has to pay to his regiment a sum of money for every year he has served under the number he engaged for. I think every Commanding Officer will agree with me that it is most desirable that increased funds should be given to Volunteer battalions, and no doubt very good use would be made of them. The first thing to be done is to thoroughly equip the men. The cost of equipment would probably be from 2*l*. 10*s*. to 3*l*. per man, but in the way equipments are used by Volunteers these will probably last from fifteen to twenty years before they want renewing. Great coats would not last so long, because I have every reason to know that in many cases these great coats are not kept purely for military purposes. They make very comfortable garments for the men to wear occasionally at night, and they will even go so far as to make use of them as counterpanes. They really do get harder worked than any other part of the Volunteer's equipment, and there will be some difficulty for that reason in issuing them. I think if they are supplied they should certainly be kept stored at headquarters, and not be issued to the men except for purposes for which they really want them. There is one other question, as to the disposal of the funds, which is somewhat interesting to Metropolitan Volunteers. County battalions, as a rule, are allowed 5*s*. per man to enable them to attend battalion drills. A county is a large area, and the men are very much scattered, and are put to a certain expense in attending these drills. But we should also bear in mind that Metropolitan Volunteer corps have frequently to proceed a long way before they can get a drill-ground which is of much practical use to them. If you go to any of the commons and open spaces round London we have to proceed by rail, and a great expense is thrown upon the corps which has to be borne out of the capitation grant, because you cannot, except in a very few regiments, expect the men to pay for themselves. The same thing also applies to attending reviews at Brighton or elsewhere; it costs us 2*s*. 6*d*. per man. That, again, is a charge on the capitation grant, and if the allowance of 5*s*. per man given to county corps were given to London corps as well, it would relieve them of a certain amount of pecuniary embarrassment. I quite concur with Sir Henry Fletcher in thinking how very grateful the whole Volunteer Service ought to be to Sir Edward Hamley for bringing before the public in the way he has done this very important question.

Lieutenant-Colonel HOWARD VINCENT, Commandant of the Queen's Westminster Volunteers: Seven years ago, my lord, I had the honour of occupying the tribune just vacated by the gallant General, whose able representation of the present state of the Volunteer Force we so gratefully acknowledge. The occasion was a conference of Volunteer Officers from all parts of Great Britain to consider the requirements of the Volunteer Force. I see around me many who took part in the three days' discussion which ensued, and who contributed to the result, viz., a War Office Committee of Inquiry. It did its work thoroughly, but the reforms accomplished have been scanty. We are in urgent need of drill-grounds, rifle-ranges, and armouries. We have no equipment, and there is a great scarcity of funds. The gallant lecturer inquires how an increased grant could best be spent in improving the force? I can assure him that the Commanding Officers will be very ready to show the Government how it can be most advantageously spent. The indifference with which the Volunteers are treated, though much less than formerly, is a disgrace to the country. Foreign nations look on in amazement and wonder. Even America knows better. Compare the headquarters of the 7th Regiment of the New York National Guard with the back room in an obscure street in which we are compelled to try and train our thousand men for the defence of the land. The Queen's Westminsters are trying hard to remedy this, aided by the liberality of the inhabitants of this ancient city towards their representatives in the army of the nation. But shame on the Government which so neglects the citizen army and drives it to seek exercise grounds from board schools, and so invoke the charitable assistance of their patrons.

Lieutenant-Colonel BIRD, St. George's (6th Middlesex) Rifle Volunteers: We are much indebted to Sir Edward Hamley for having read this very able paper, and more particularly I think for having pointed out the great wants of the Volunteers. I may say I have been for many years trying to point out to the public the necessities and the wants of the Volunteers. As lately as last September a letter of mine was published in the "Times," in which I pointed out very earnestly what our great wants were. As we have heard from many speakers, we want more money, and I think it might be very safely left to the Commanding Officers to lay out that money to the best advantage. I pointed out in that letter that we Volunteers were without Martini-Henry rifles; that to some extent has been amended by serving them out to us, but I do not think any force can be supposed to be efficient or fit to take the field that has not water-bottles, great coats, or even haversacks, or any means of carrying ammunition at all. That was very forcibly pointed out the other day at a meeting of Commanding Officers, which was held at the Horse Guards. Colonel Davis was very anxious to instruct us as to serving out ammunition in the field, and he turned round to the Commanding Officers and said, "Gentlemen, will you bring your ammunition-wagons?" We all looked at each other; there was silence throughout the room, no one had such a thing. He said, "Surely you have some means of distributing ammunition." Some one suggested the only means was to carry it in the breeches pocket. Now, I think the breeches pocket, unless the man has a haversack, is about the only means that a Volunteer has of carrying anything. He has no valise equipment, and he has no knapsack. If the Volunteers are ever likely to be called out for service, they must have certain means of carrying their equipment. We have no ammunition-carts, and we have no baggage-carts. It was also suggested at that meeting that it would be very useful that we should have water-carts. At the present time I do not think there is a single regiment in the Service that has a water-cart. It was suggested to Colonel Davis that it would be very useful that each column should have one, but it was pointed out that there were no horses. I think that very forcibly shows how lamentably deficient Volunteers are in everything that they really require; they have nothing at all to carry anything in, no water-carts to supply the wants of the men, and no wagons to carry the baggage. But worse than that we have no great coats. We were told at that meeting that if application was made to the Clothing Department great coats would be served out. There are very few regiments in London which have great coats—I think only about three or four—and about two regiments have valise equipment. Several regiments applied to the Clothing Departments for their great coats, but there were none to

be had. I think that is a most lamentable thing, and it shows at once that something must be done in order to make the Volunteer corps ready to take the field. There is one other matter which Sir Edward Hamley has touched upon in his paper, that is, as to the Volunteer Reserve. In the same letter that I wrote to the "Times," I pointed out how very easy it would be to raise the number of Volunteers by drawing back men to the ranks who have already served so many years, and I think I pointed out that there was a very practicable and cheap way of getting these men back. The fashion in nearly all the regiments is that the men join for a certain number of years—three years, four years, or five years. It is quite evident that in those three, four, or five years the men do not wear out their tunics, whatever may be the case with their trousers, and I think if men after serving in the ranks for five years would join the Reserve for another five years their tunics would be serviceable for that period, and if need be they might be supplied with trousers at a very small cost. They have their belts, they have the rifles which they have been accustomed to, and in that way you will have a very good Reserve Force. You would ask those men after their first term of service to keep themselves efficient by serving annually on two parades and at the inspection. No extra expense need be incurred by Commanding Officers, or very little, in bringing these men into the Reserve. All the executive part of the work could be done by the present staff, and no doubt there are plenty of Volunteer Officers who would be very glad to come forward to command these men. I think if Volunteer Commanding Officers were allowed an additional 1*l.* per man they might do very well with it, and they might by that means obtain a very large force, I daresay 200,000 or 300,000, very easily; and what is better, you would keep touch with your men in that way, and the men would have an *esprit de corps* which would keep them to their own regiments, and we know how very necessary that is in making Volunteers efficient and keeping up the proper discipline that they ought to exhibit in war. There is one other matter I might speak upon, about the mounted infantry. A regiment is connected with my own which has mounted infantry, the Victoria Rifles. You say, "How can they be increased?" There is one way by which you can decrease them very easily, that is by not giving them some encouragement. At present these men have to supply everything at great cost to themselves. When they take part in a review or an outing, they are put to great expense for their horses, which they have to pay for themselves, and their equipment is very expensive, but I daresay you will hardly believe that although these men devote all this time to it, they are not allowed to count one of their parades towards their efficiency. I think that is very hard indeed, and these men, after devoting so much time and money, receive very poor encouragement. I am sorry we have not a Cabinet Minister or some one present who could take what we are saying home to Mr. Gladstone, or to some of those high in office. If we Volunteers are to exist there is no doubt it must be made perfectly clear to them that we must have more money. It is no good hammering away at the Horse Guards or the War Office, they are quite impotent about money. To get money we must hammer at the House of Commons, and make it known by no uncertain voice that we must have it. At the next election, whenever it may be, I think this ought to be pretty clearly understood throughout the country. It need not be made a party cry, but it ought to be made a national cry, that we want more money for our Volunteers.

Colonel Du Plat Taylor, 24th Middlesex Rifle Volunteers: I think we are very much indebted to Sir Edward Hamley for his most interesting paper, more especially as I have reason to believe that Sir Edward was not always in favour of the Volunteers, and has only been recently converted to appreciate their advantages, and this is the outcome of his opinions at the present time. With reference to the ranges at which Volunteers should chiefly practise, as an old Musketry Instructor I believe, by steady drill, every man can be made to shoot at 300 yards; the exceptions are very rare indeed; but beyond that I would suggest that there should be an extra grant for those men who really shoot as marksmen, and the best shooting should not be done regimentally but should be done by brigades; the General commanding the brigade should have certain days fixed in the year when all those men who are good shots should

compete. The practice should be entirely under the brigade staff, and an extra grant, say of 5*s.* a head, should be given to every man who becomes a marksman. By that means you will encourage very good shooting in your regiments, being satisfied if the ordinary run of Volunteers can shoot at 300 yards, *i.e.*, become second class shots. On no condition would I give a grant of 10*s.* to any Volunteer who has not passed into the second class, and the money so saved should go towards extra grant for marksmen. The second paragraph as to garrison duties has, I imagine, been somewhat misunderstood by the Officers who have already spoken. I do not think Sir Edward Hamley intends that the Volunteers should do garrison duty, and I am one of those who believe that they are not intended to do it and cannot be spared for it. We have not the right class of men in our ranks. A man who is in settled employment cannot be spared even for two or three days, without the permission of his employers, to do garrison duty and do "sentry go" in a fortress. What I believe Sir Edward Hamley means is that during our leisure time, in the Easter holidays for instance, we should occupy the fort or position which would be our position in case of war, and in that view I entirely agree. It would do us a great deal more good than manœuvring about on Brighton Downs, operations which I never appreciated, and which I hope I shall never take part in again. I am quite sure that if our Volunteers were sent down to do fortress duty, say at Dover, it would be of much greater benefit to them, and Colonel Hope will confirm this when he was at Dover with his Artillery Regiment at Easter, where they were most excellently received by the men of the regular service. The London Rifle Brigade also spent five days in a fort at Dover much to their advantage, and both regiments were much better employed than in taking part in the Brighton Review. So far I entirely agree that at Easter or any other Bank Holidays men should go to the positions assigned to them as suggested in this scheme, which has been so ably sketched out by Sir Edward. I cannot give any opinion as to mounted infantry except that it is entirely a matter of money. In all our regiments we have a certain number of men who would be very good mounted riflemen, and with money could be so equipped. The best way of raising additional Volunteers for the defence of London is also a matter of money. I could get 2,000 men to-morrow if the expense of clothing them were not too great, and I am sure other Volunteer Officers will confirm this. At the same time I believe that if war breaks out, a great many, certainly half of those who have left our regiments in years past, would rejoin the colours, and by that means we could get all the men required. I know nothing about Volunteers in the counties, but I should think that their increase in numbers is a question of money. The seventh paragraph—"Supposing increased funds to be available, how to apply them to the most practical advantage"—brings me to speak about one of the most important matters that Sir Edward Hamley has alluded to, namely, the equipment of Volunteers. When I raised my regiment seventeen years ago I went on the principle that no Volunteer could be considered efficient unless he were thoroughly equipped, and every man of my regiment was at once on passing drill fitted out with great coat, valise, mess tin, water-bottle, haversack, and gaiters, so as to make him complete in every way. I freely confess that our financial state is a very poor one, and an addition to the capitation grant is necessary, and the way in which this money could be best applied (if we could get an extra ten shillings) would in my view be this: all regiments which paraded at their inspection with all men fully equipped should have the additional grant of ten shillings per man. By that means you would be certain that the money was properly spent, and any regiment which at the inspection appeared without valise, water-bottles, &c., would not be entitled to this extra grant. We can scarcely say that we have so and so many thousand Volunteers ready for service if not one regiment out of ten could move out of London without going to the Government Stores for their equipment, and Colonel Bird has just told us that, even when so applying, the coats are not forthcoming. One Officer has said that it is undesirable to have great coats in the possession of the men as the coats are misused. For the sixteen years during which I have issued great coats I have found the men most careful with them, and if the great coat is used as a bed cover it is much better than packing it up and letting it get mothy. I am sure that most Volunteers are very much the same as my men, and would take care of a great coat if issued to them for this excellent purpose.

Major Walter Cowley Dixon, 3rd Volunteer Battalion (the Queen's): There is one question to which I should like to refer, and which I must say has never to my mind been thoroughly cleared up, that is under what circumstances should we now be called upon to serve,—should we only be called upon in the event of an actual invasion, or should we be called upon in the event of our being wanted to replace the Regulars and Militia who would certainly in the case of a foreign war be sent out of the country to a man, and in the case of our being wanted what rate of pay is the Government prepared to supply us with? *i.e.*, what provision would be made for wives and families? I think that is a point which certainly ought to be made much more distinct than it is at present. Of course in the Army a man on the married establishment knows exactly what he is about, but a Volunteer earning 30*s.* a week, and having a wife and four or five children, would not be able to get on at all, and could not volunteer for service if called upon on anything like the rate of pay of the ordinary married establishment. I think as we are in ordinary cases a very cheap force, the least the nation could do is to put down and really make it thoroughly understood what rate of allowance they will give married women whose husbands are called out. I think that would do much more than many other things to make us feel that we are really a service that can be called upon, and the Government would feel that they were entitled and could call upon us in the case of our being wanted. It is an important point, and one I should much like to see really settled. There is no doubt things have altered very much since we were first established, and we are now, I believe, only to be called upon in case of invasion, in which case everything would be so disconnected and thoroughly upset, that every man would really practically lose his employment; but if we are wanted to replace the Regulars and the Militia who would be sent away, then we ought to have some recognized rate of pay, and the Government ought to be able to call upon us. That is all I wanted to say with reference to that point, but I am very glad to hear that Sir Edward Hamley can find us artillery, for that was a point I could never understand, how we were to get guns. I have been making a rough calculation which shows that we want 74 batteries for about 150,000 men, and I do not know where they are to come from. It seems to me also that, taking the ordinary proportion of troops, we want about 41 regiments of cavalry, which seem to me to be most conspicuous by their absence. Everybody knows at Brighton that we had about 50 or 60 sabres altogether for 20,000 men, which is perfectly ridiculous and absurd. We had no cavalry, and I always used to think we had no artillery, but that I am glad to say is to a certain extent disposed of. Artillery Officers I am sorry to say have not come forward to say whether the proposition of using these heavy 40-pounder Armstrongs is practicable, but that of course I as an Infantry Volunteer know nothing practically about. As to Reserve Ammunition Column and Transport, they are also absent, but we should have to look to the Regulars to provide them. The one thing that we really do want in the way of equipment is great coats. My regiment was very short at Brighton this year. I asked the reason why and I found at four o'clock in the morning when we had to muster it was raining hard, and I could not blame the men for objecting to march 1½ miles in the wet, getting thoroughly soaked, and then going down to Brighton in the train with the probability of getting another ducking and then coming back wet again at night. I know we Englishmen consider ourselves pretty tough, but I do think that is more than any man ought to be expected to stand.[1]

Major the Hon. J. S. Napier, Adjutant 7th Middlesex Rifle Volunteers: Being an Adjutant of one of the Volunteer regiments now in London, I

[1] What I wished to press is that the allowance to a married woman should be increased in the case of a call being made upon the Volunteers, as otherwise the men must break up their homes; it would be impossible for a woman to keep her home together upon the ordinary married woman's allowance, even if her husband were only absent for a few weeks: in return for this, the man should engage with the Government for three or four years instead of being able to resign at fourteen days' notice on payment of what is due from them to the battalion.

think I may perhaps be allowed to say something on the question of shooting. Shooting cannot be properly executed without proper ranges, which should be at all times accessible to the men. Those ranges are not provided for by any legislation at present, and I maintain if any good is to result from this meeting that the subject should be brought prominently before the Government by influential persons such as Lord Wemyss and Sir Edward Hamley. These propositions ought to be put in a plain workmanlike way before the Government. It should be stated that it is impossible for the Volunteers to properly qualify themselves in shooting without proper ranges and proper means for getting at them. What is the actual state of the case? Here we are in London with a beautiful common at Wimbledon available, which would afford rifle range for thousands of our Volunteers. It has now degenerated into a sort of park for the local ratepayers, and the inhabitants of handsome villas which surround it. Here we the London Scottish are with prescriptive rights on that Common, but it is as much as we can do to hold these rights, for we are threatened day after day, by the Conservators of the Common, with expulsion, and subjected to annoyances of every description. These annoyances are such that at the present moment the utility of our ranges is almost nullified, and would be entirely so were the Conservators of Wimbledon Common to have their own way. I think the Government ought to realize these facts, and put a stop to these unpatriotic short-sighted obstructions which really ruin any possibility we might otherwise have of qualifying ourselves as good riflemen. In other localities Government ought to legislate so as to enable Volunteers to take or acquire such ground and such ranges as would be available for their use within the vicinity of their headquarters. Again, as regards funds for this purpose, it is quite ridiculous to suppose that Volunteers can meet all the claims made on their private means, and in addition provide themselves with freehold or leasehold land for ranges. These ought to be provided for out of the pockets of the nation, quite independent of the capitation grant. In one locality land would cost five times the money that it would in another, and an increase of capitation grant would in no way equally compensate people who have to purchase land in the vicinity of London, and those who have to purchase it in the Highlands. The two cases cannot be dealt with under the same grant. The ground ought to be supplied, and the ranges maintained by Government, and placed at the disposal of the Volunteers whenever they can make use of them. Then as regards equipment I am afraid I must differ from some of the gentlemen commanding Volunteer regiments as regards this equipment of great coats, baggage-wagons, water-carts, water-bottles, &c. Those things are easily acquired at twenty-four hours' notice, and would be a great incumbrance, a great nuisance and expense to many regiments on a peace footing. In conversation with a brother Adjutant with regard to his regimental cart at Brighton, which unfortunately did not turn up at the right time, I pointed out that our cart was a hired cart and did turn up in the right place and at the right time. It was just as good-looking as his, and gave us no trouble at all. It was hired in London: we have not to pay for the horsing of it, we are not bothered with its repairs, and it is a matter of no concern to us; and he candidly acknowledged that his was always a matter of concern to him and a great expense to the regiment. As regards increasing the capitation grant, I think that is an excellent proposal, and it should be carried out, but be made conditional on the thorough efficiency of the men, and on their satisfying a certain higher standard in physique and a certain higher efficiency in rifle shooting. I do not think that filling the ranks with the seedy white-faced boys that we see in so many of these regiments is of the slightest use to the country, and it only misleads in the hour of danger. What you want is men who are able to carry their rifles and shoot, and let the capitation grant be conditional on that physique and efficiency. I think another ten shillings would go far to assist us in providing many strong healthy fellows who would join us if it were not for the expense, and would enable us to add greatly to our numbers. As regards equipment, I do not think we ought to tie the hands of Commanding Officers in any sort of way; give them the extra money and let them spend it with the approval of their financial committees in the way they think best. My experience of the Volunteers is that money is far better applied in the Volunteer Service than it is the Regular Service. Although I have been

eighteen years in the Regular Service, I can honestly maintain money is more conscientiously and more usefully applied in the Volunteer Service, because as yet the Volunteers are not over-hampered by red-tape principles which may apply in one place and amongst one lot of men, but which do not apply in another place and among another lot of people. The ten shillings extra would be spent in a perfectly different way in London to what it would be in the north of Scotland. Then with regard to discipline and drill, which are essential to the soldier, I say it is perfectly impossible to have discipline and order in our offices and in our ranks without proper premises in which to carry on the ordinary duties and business of a regiment. Those premises do not exist excepting in one or two isolated instances in London. The funds for this purpose ought not to be extorted from private individuals, but ought to come out of the pockets of the nation. Why should the country not build drill-sheds? They can afford to build schools all over the place, why should not they build proper establishments for our Volunteers? The only covered place the London Scottish had to drill in was Westminster Hall, and because a few Irishmen chose to amuse themselves at the expense of Government we are deprived of that privilege, and obliged to go to work in the dark arches of the Adelphi. I hope that gentlemen here present, such as Lord Wemyss and Sir Edward Hamley, will place on paper two or three practical suggestions to put before the Government, and call upon them to give us a decisive answer one way or the other, and let two of those suggestions be the means of acquiring proper ranges and proper places to drill men in. In that way you will secure good shots and well-disciplined men, and that is the first thing you want in a Volunteer corps. Let the water-bottles and great coats come as they may, they will come in time.

Wednesday, April 22, 1885.

Adjourned Discussion on Sir Edward Hamley's Paper.

Colonel W. W. Knollys, late 93rd Highlanders: Lord Wemyss and gentlemen, I owe some apology for speaking on this subject as I have not served in the Volunteers, but from various circumstances I have seen much of this force during the last twenty years, and I may say have noticed very considerable improvement. The object of this discussion, as I take it to be, is to consider what are the best measures to increase the value and efficiency of this force. The value of a force depends upon its quantity and on its quality. With regard to the quantity I should have thought the country had very good reason to be satisfied, considering that the force numbers now about 214,000 men. Sir Edward Hamley, however, as part of that scheme considers that at all events that portion of the Volunteers which belongs to London and the neighbouring districts should be increased in order to facilitate the carrying out of that most desirable scheme—the protection of London by means of a concentric camp. There is another reason also, I think, why it is desirable that the force should be increased in numbers if possible, and it is this. However zealous and patriotic the members of the Volunteer Force may be, it would be manifestly impossible for any but a small proportion to be under arms continuously at any one time except if an enemy was actually on our shores. Again, there are others who though not prevented by business may be often unable to support the fatigue of an active campaign. Therefore I think the suggestion that the force should be increased in numbers would meet with the approval of everybody. That increase could be accomplished in a very efficient manner by means of a reserve Volunteer Force such as has been already suggested; but what would serve to increase the Volunteer Force more than anything else is not only an increased expenditure, which of course is a valuable factor in the matter, but also a conviction on the part of the force that they were regarded by the authorities as a genuine element in the defence of the country. Let them once realize that a real value is set upon their services, and I am sure that when the moment comes when danger approaches our shores there will be no lack of

men to fill their ranks. I think it is very desirable that not only the strength of the Volunteers should be increased, but that their organization should be a little altered. We see on Easter Monday Reviews companies turning out from 20 to 33 or 34 files: a company of that size is quite incapable of carrying out the tactics of a field day, and whatever the nominal strength of a company may be, you cannot expect to bring into the field the full number of that company. Therefore I think it is highly desirable that the strength of companies should be increased, even if it is to be accomplished by reducing the number of companies in a battalion. If you have a strength on paper of 140 men, the probability is that you will not have more than 100 men efficient on the day of battle. With regard to the question of looking at the Volunteer Force as a reality, I may observe that although a scheme came out a few years ago for fixing apparently the place of all the different land forces in case of invasion, yet as regards the Volunteers that has not to a certain extent got further than on paper. What the Volunteer Forces want is to know what is their function in a case of invasion—what portion of them are to occupy garrison towns, what portion of them are to occupy strategical camps, and what portion are to be used as field troops. The home ties and the occupations of Volunteers tend very much to chain a large proportion of them to garrison towns and strategical camps, because they could perform the duties of guarding those towns and camps without being separated from their homes or deprived of their means of livelihood. But the number which we possess already is far in excess of what could be absorbed by garrison towns and by a reasonable number of strategical camps, and therefore in my opinion some arrangement should be made to show what portion of the Volunteers could be used as a field army. Certainly every man in a Volunteer regiment would not be capable of taking the field—his occupation, his health, and the circumstances of his life would prevent it. The idea has been suggested of having a mobile and a reserve Volunteer Force: I think that idea is worthy of consideration at all events. The Volunteers who manned the garrisons and fortresses, or who occupied the strategical camps, would be performing their duty to their country just as much as those who took the field; and on the other hand there are a certain number of young men who could without inconvenience or undue sacrifice take the field, while there are others who could not. Therefore it might be worthy of consideration whether in each battalion a certain number of companies, say four or six, should not be looked upon as mobile companies composed entirely of men in the full vigour of youth, and capable of leaving their homes or occupations for a week or two, while those who could not do so could act as the reserve battalion of that regiment. But having decided what should be the functions of the Volunteers, and what would be the probable course of events, I conceive that the Volunteers should be worked up to the logical result of that, and that whatever is decided to be the distribution or the place of the Volunteer, the training should be in harmony with it. We have a large number of very efficient corps with a considerable number of very zealous men, but apparently we have no plan whatever to work upon. Above all there is this matter that is worthy of the deepest attention—a matter discussed in this hall some two or three years ago. It has again come to the front, and is one of the most important nature—what is the use of these 214,000 Volunteers, for with the exception of two or three regiments there is not a single one in a position to take the field for more than twenty-four hours. They want great coats, they want water-bottles, they want haversacks; I believe not one of them has the proper number of wagons; they have neither camp kettles nor blankets; they have no means of distributing ammunition—in fact they are simply men with muskets, disciplined, courageous, and with more or less skill in shooting, without any other of the requisites which convert a number of armed men into an army. If it is worth the while of the Government to pay somewhere about 600,000*l.* a year for these 214,000 Volunteers, it would be quite worth their while to add another 100,000*l.* at least to make that force efficient. If the 214,000 men are unable to keep the field for twenty-four hours, it would be very much better to have a smaller number of Volunteers completely equipped. If they are worth keeping up at all they are worth keeping up properly. With respect to the Mounted Rifles and the Yeomanry, one of the speakers last Friday suggested that the Yeomanry should be converted into Mounted Rifles. I think they would find on inquiry among the

Yeomanry that such a proposal would find no response from them. There is a great deal of sentiment in all things, especially in military matters, and I may say above all in cavalry matters: the Yeomanry will be cavalry men, or they will not serve at all, and there is, no doubt, an eminently useful place for them in the scheme of national defence. But with regard to mounted infantry, that is a force which in this enclosed country, where there is no room for the action of large bodies of cavalry, will be of the greatest possible use. It has been proved that entire corps of mounted infantry cannot be kept up: they have had a struggling existence for some years, but lately certain corps have initiated a section or company of mounted men attached to the battalion pretty much after the principle of the battalions in South Africa during the Transvaal and Zulu wars, where many regiments had each their mounted troop or section. The expense is the great difficulty. They would be most useful, because the sections could be easily joined together and converted into companies or even regiments if necessary; but the expense might be a good deal diminished if they would realize the fact that the horses they require should not be war horses, but that the most useful and efficient animal for the purpose of mounted infantry is a small handy cob which you can mount or dismount from easily, and which can scramble up anywhere. Any plan which will reduce the expenses will, I think, facilitate the development of this most useful force; and I hope the suggestions which have been made will receive the attention and consideration of the Government.

Major PREVOST, Argyll and Sutherland Highlanders: My Lord Wemyss and gentlemen, I must apologize for not being a Volunteer. But the subject so ably brought before us is one of national importance concerning the whole Army; hence, I venture to join in this discussion, and will take the several points selected for consideration *seriatim*. The first relates to ranges. I am of opinion that Volunteers should not be trained to fire nearer the target than 100 yards, nor at a greater distance than 500 yards, except such as prove themselves proficient, and these may rightly be exercised at longer ranges. Now that the force is armed with the Martini-Henry rifle, Government should undoubtedly provide convenient ranges of sufficient extent. But it rests mainly with the Volunteers themselves to improve their shooting. Certainly, many excellent rifle shots compete annually for prizes at Wimbledon and northern meetings, but the shooting of the majority is not what it can be made. Instancing one Metropolitan corps, the system that obtains is to fire 20 rounds in order to make a certain score. Failing this, the corps supplies a man with 100 more rounds, and whether the result be good or bad, the man's status as an efficient Volunteer is not affected. Secondly, the proposed scheme for the defence of the capital and the occupation of strategical positions is at best experimental, and might prove impracticable in well-built-over districts. Nevertheless, Commanding Officers would do wisely to keep it in view and improvise now and then instructive operations, *e.g.*, the defence or attack of a post,—holding convergent roads,—outposts, and other kindred duties, and so vary ordinary battalion drill and marching past. They need go no further for this purpose than the undulating ground north of the Serpentine. Here I venture to impress the necessity of careful instruction in these covering duties, and of inculcating vigilance in the field; for never is a campaign without a record of some disaster due to neglect of these precautions, and just a month ago we had to lament the same thing near Suakim ourselves. Next, as to mounted infantry. To raise them requires funds. Such a body would be a most useful adjunct, whether conveyed on ponies, tricycles—as lately suggested—or on Bianconi cars, as used by the Hants Mounted Rifles, which did good service in the Salisbury manœuvres. They, however, no longer exist. I deprecate any idea of converting Yeomanry into mounted rifles, being strongly averse to hybrid services. Then, touching artillery. The Volunteer batteries on the Clyde, the Mersey, and various points on the coast are armed with obsolete smooth-bore ordnance, and it is well worth considering whether these should not be replaced by modern 20-pr. and 40-pr. rifled guns of position, to be kept in sheds complete with equipment, side-arms, and harness. Target practice might be carried out seaward, and in time of emergency the guns might be moved by rail or agricultural teams to positions duly selected. The fifth and sixth points, relating to increasing the force in the Metro-

polis and in certain counties, involve expense; but I think we need not fear lack of men once the nation is roused to a sense of her responsibilities. In 1877, when we were very near war with Russia, I found many Cornishmen in the mines of Colorado ready to return home to take their places in the ranks; and we have had frequent evidences of patriotism lately in all parts of the world. A Volunteer reserve should be started; the Victoria Rifles in Montreal have established theirs already. Lastly, more money is needed, and I believe it will be granted by Government to the Volunteers. The proper person to administer the funds is, I think, the Commanding Officer, who should be judged by results. Extra funds ought, in the first place, to be applied to provide personal equipment for each effective Volunteer—I mean great coats, valises, water-bottles, leggings, haversacks, and means of distributing ammunition, which are absolute necessities on taking the field. All these articles should be kept stored with the rifles at headquarters or in drill-sheds similar to those now in possession of every Volunteer regiment in Canada. I trust, my lord, I have not occupied too much time of this meeting.

Lieutenant-Colonel CHURCH, 3rd Middlesex Rifle Volunteers: My lord, there was one thing which struck me forcibly on the last occasion, and that was the suggestion that we should very much reduce the standard for shooting of the Volunteers. It appears to me that that is most distinctly a very retrograde movement, and one which if adopted will completely destroy the value of the Volunteer Force. The suggestion was that Volunteers should not be required to fire beyond 300 yards, and that was after we had been making a claim for an improved weapon, and had obtained that improved weapon with an extreme range of 3,100 yards. Having got that, we deliberately ask that we may not be required to use it except up to one-tenth of its power. The difficulty felt must arise from want of ranges, want of interest in musketry, and want of facilities on the part of regiments in carrying out the desires no doubt of their Commanding Officers. If you study the new Red Book, just to refer to it for one moment, you will find that in defensive operations you must often use the longer range. We read of the medium and even extreme ranges as being necessary for the purpose of checking an attack, or of forcing an enemy to develop his attack. If it is known that the Volunteers are men who never, under any circumstances, are trained to fire beyond 300 yards, what will be the effect? Why, the enemy will march up in perfect coolness, not expending a round of his ammunition, never having a shot fired at him, and developing his attack shortly before he reaches the 300 yards. If anything can be deemed more disastrous than that I do not understand what it is. There was a Committee appointed a little while ago for the purpose of settling the range question, but nobody has heard what became of it. There are some excellent ranges near London. The Government might first secure the land, and then I think they might give the Volunteers the means of access to it—I mean that Volunteers going down to practise at such ranges should have the same facilities that the railways give to working men who travel indefinite distances and back again for threepence or fourpence. There is one other point, and that is that the regiments themselves ought to hold out encouragements for shooting. You ought to make the shooting not only part of the regular business of the soldier, but you ought, if possible, to make it interesting to him, and you can do so. I have had for three or four years in my regiment a rifle club, and it has succeeded admirably. A very large proportion of the men belong to it. They shoot for very small prizes, but still it induces a competition between the different companies. Last year all but three men out of 105 recruits passed out of the third class, and a very considerable proportion became first-class shots, and the best shot in the battalion was a recruit. I do not claim any particular merit for it, but what you have to do is to insist upon the position drill and aiming drill being thoroughly practised, and if you can only get the subaltern Officers to take an interest in the shooting as well as in the drilling the matter is accomplished. I think a little pressure might possibly be put on by the Government. Why should not a larger grant be given to the man who gets into the first class, and a smaller grant to the man who remains, say after the first year, in the third class; or, in the latter case, why should it not be taken away altogether? The great evil arises no doubt from the fact that there are few ranges at available distances, and there is a rush at the end of the year to get the

men through their classes, or firing so many rounds to earn the capitation grant—many rounds no doubt perfectly idly shot into the air. That ought to be put an end to, and I can assure you that it is a matter of great anxiety to those in charge of the ranges when they see a lot of recruits brought down who may have been passed through the position and aiming drill but have not learned it. The men have to get their finishing touches on the ground, and that is rather dangerous when you have in prospect an action for an injunction, or something of that kind. There is one other matter which perhaps I may be allowed to offer a few observations upon, and which more particularly affects my own district. The regiment that I have the honour to command occupies stations extending from the Royal Small Arms Factory at Enfield Lock, on the Lea, and Tottenham (also on the Lea) to Hampstead and Hendon, covering the whole of that line designated on the plan "blue" of the outer fortification. Nothing more struck me in that most admirable paper of Sir Edward Hamley's than the proposal to form those fortifications with a view particularly of concentrating Volunteers in particular spots. In my district nothing could be more valuable, not, I mean, merely for the regiment that I command, but for all the regiments in the north of London, which could be there accommodated with headquarters and centres to which they could go. For instance, take the one point which is mentioned, the Alexandra Palace, which occupies a hill formed for a grand fortification, with the northern heights of London to the west, and land peculiarly suitable for defensive works on the east. The Alexandra Palace, as one knows, is in the market. With its 300 or 400 acres of land it is admirably adapted for the general purpose which Sir Edward Hamley points out—for drill-sheds, barracks, and things of that kind, and places where you can stow away all the guns which are wanted, and all the military stores. Of course the Palace would go, and instead of Alexandra Palace you would have Fort Alexandra; but it would be a very popular thing. In the first place, there is a great craving for an open space there, and the city of London and the Metropolitan Board of Works are, I believe, only too anxious to secure that very place, and probably would grant a handsome contribution in money. Then move the Middlesex Regiment from its quarters at Hounslow, where the Middlesex men can hardly ever get, to Muswell Hill, increase it by one battalion, and let that be the centre of the Middlesex Volunteers. Let regiments be told off to concentrate occasionally at different points; let them spend their Easter or Whitsun there for the purpose of learning their military duties, and then the whole thing is practically done. That is an experiment which might be made at once. I have no doubt there are other lands which are equally available, but it is an experiment which I believe might be tried there, and most usefully tried. I only hope that something will be not merely "considered" but done, because really one does feel that on such a day as Easter Monday when you have a vast number of men under arms, and when you have accomplished all your programme, it really comes to this, that you have moved them with order, that is, you have entrained them and detrained them properly, and then you have had a magnificent pageant at Brighton, and an indescribable something on the Downs, and then you come back having practically learned little or nothing. I hope it may be possible to carry out this scheme. My regiment, unfortunately, although it occupies the extreme north of Middlesex, has never been able to get any designation, because all the other titles—North Middlesex, West Middlesex, and South Middlesex—have been taken up by other regiments, and if we ever get to that consummation of having Fort Alexandra, I hope that the claim of my regiment to be the Alexandra Regiment may be acknowledged.

Major CHARLES FORD, 4th Volunteer Battalion the Essex Regiment: My lord, as I am about, I am afraid, to express views which may not meet with the approval of many gentlemen here, I must ask for the indulgence of this meeting. I want to say a word or two about the Volunteer commission. A Volunteer commission is not a commission which a man should be particularly anxious to seek for, and if I may venture to occupy your time for a few moments I think I can give you a rather strong illustration of the truth of that observation. An Officer commanding a Militia or Volunteer regiment, whatever may be his qualifications, although he may have attended schools of instruction and have passed with distinction in tactics, and otherwise have qualified himself and fitted himself for command, has only this

consolation, that if he wants to serve with the line he is permitted, as a very great favour, to hold a commission as Captain in the reserve of Officers. I think that is a very great indignity upon Officers of the Auxiliary Forces, and it is one that should be removed, for if a man is only fit to serve as a Captain in the Army Reserve, he is not fit to command a battalion of Auxiliaries. With regard to the paper which has been circulated, I will refer first to the last paragraph:—"Supposing increased funds to be available, how to apply them to the most practicable advantage." I should suggest that the way would be to disband altogether the present Volunteer Force at a suitable time. One thing will never be disbanded, and that is the spirit of patriotism which animates its ranks. I would suggest, then, that you should invite the men of that force to divide themselves into three parts, the first part to consist of a force of men who are willing to enrol as militiamen, simply with this provision, that they should drill as they drill now, instead of drilling for twenty-one days consecutively; and it should be part of their obligation, that being militiamen in receipt of pay, they should be willing to serve in any part of the Empire, at home or abroad, and they should always be under the Mutiny Acts. The second class should be composed of men in the nature of militiamen, drilling as at present, and placed under the Mutiny Acts when called out, but who should not be liable to serve abroad. The third class should be constituted much as the Volunteer Force is at present constituted, being composed of men who regard themselves purely as Volunteers, and as having nothing to do with pay, and who say, "We object to come under the territorial system; we object to being constituted the third and fourth, &c., Volunteer battalions of such a regiment." I think if such a scheme as that were carried out it would be of considerable advantage to the country, for there are thousands of Officers and men who are ready at all times to enter upon military service at home or abroad, and it is a great disappointment to those that though they drill year after year there is no chance of seeing actual service. Then, as regards the proposed defence of London, I should venture to suggest that a good plan would be to have a permanent standing camp in the vicinity of London, or even say more than one such standing camp. I think there might be a permanent camp for two or three months at a suitable time every year, to which Volunteers of all ranks should go, and whilst there, should be kept under proper military discipline, for I am sure that the Volunteers lack discipline. As to Volunteer mounted infantry, that is purely a question of money, and if the Government think such a force would be an advantage to the country, and will find the money, we will find the men. There is one observation with which I should like to trouble the meeting, and that is I cannot for the life of me understand why one man, who is called a Militiaman, should be taken to Aldershot and should get a certain amount of pay there for twenty-one days, while another man, who is called a Volunteer, also goes to Aldershot for eight days, and only gets an absurd trumpery allowance in the shape of pay; and the same objection applies to the Officers. It does seem to me that if the man is to have pay at all, the principle of pay should be thoroughly recognized, whether a man trained for eight days or twenty-one days, and whether he be called a Volunteer or Militiamen. Why, too, if Militia battalions are called 3rd and 4th Battalions are not the Volunteers called the 5th and 6th Battalions, and so on? There is much more that I should like to say, but I have already trespassed too much upon the indulgence of this meeting.

Colonel GORDON IVES, Honorary Colonel 18th Middlesex Rifle Volunteers: When I read the paper now under discussion in the "Nineteenth Century" by so distinguished an Officer as Sir Edward Hamley, I was delighted, and for a short time thought that at last something would be done for the Volunteers and to place the country in a condition to defend itself. I have come up from the country to-day on purpose to attend this meeting. It seems to me that we are on the eve of war, at any rate we may fairly assume that it is even more than probable, it is therefore too late in the day to commence any fresh reorganization of the Volunteer Force. The time has come when, if it is good for anything, whatever has been done must bear its fruit. If the Force be worth anything, now is the time to show it. If nothing, shortly will be the time to come down with a crushing blow on the head of those who have made it so. It certainly has not been, and is not the fault of the Volunteers them-

selves, who for twenty-five years have worked hard against every difficulty and against such a mass of ignornnt opinion and folly as to be almost inconceivable. But I doubt if the Volunteer Force has as much vitality in it as it had some ten to fourteen years since. Where are the young Lord Elcho's? Not doing as I have seen the gallant Chairman, walking into Brighton, and remaining all day with his regiment, from 3 or 4 A.M. to late the following night, and working day after day and year after year. Hundreds of young men worked then, hardly any do now in the same way. The time has now come for us to say what can be done, and it seemed that perhaps some of my experience, extending over so many years, might be worth hearing on such an occasion. In 1879, when there was very nearly a war between this country and Russia, I ventured to commence raising a battalion from my regiment and others, who would be ready to go to Russia or anywhere with me. I soon found that some seventeen Officers put their names down, but there seemed some hesitation on the part of the men, and very few volunteered to go, because they all said, "Tell us what our engagement is to be with the Government, for, unless we know that, and what we undertake, we cannot undertake it." Now, that seems to me a very sensible and a wise remark. The great mass of the young artizans in this country (and there are no finer soldiers) marry young, and, is it to be supposed that they can leave wife and children without knowing what they undertake; whether the engagement is for three months, six months, for a year, or for the campaign? Now, on the apparent eve of war, it is most important, and indeed, absolutely necessary, that it should be decided what it is that the Volunteers will be asked to do, and, above all, what provision will be made for the families of the Volunteers during the time of service. That thousands of men will serve, however, there is no doubt, on fair conditions. In 1879, my dear friend, the late General Burnaby, then commanding the Grenadier Guards, asked me to come to the Horse Guards to meet the Commanding Officers of the regiments of Volunteers attached to the Grenadier Guards, and I went. Colonel Burnaby consulted us as to what could be done in case of war, and I told him that I had commenced to raise a battalion or two. Colonel Vickers added that 300 men of his regiment wished to go. Colonel Burnaby then suggested that these 300 should join the Grenadier Guards; but Colonel Vickers stated that they would only go in the battalion of Volunteers about to be formed by me under my command, to go to Russia or anywhere our services might be required. I think that is worthy of note, because, as far as I know, I had never seen these men before, and therefore it was not from any personal feeling that they offered me their services. It is most unjust on the part of the general public to call upon all Volunteers, because they happen to be prepared for one duty, to do another. There is no reason why, because a man is a Volunteer, he should go out of the country more than any other citizen. But we know that our ranks contain hundreds and thousands of men who will do more than ordinary citizens, and who will do all they are asked to do, be that service what it may. We know this because we know the character of the men and the energy with which they have worked amongst us; but there is no reason why the country should call on those "who have trained to defend the country at home" to go to India or Russia. The great mass of the Volunteer Force should be always ready, trained, armed, equipped, and the time to call them out for permanent duty is when all other Englishmen worthy of the name will also be called out. I think there is much danger in process of detail, under which Her Majesty's forces are generally called out for service, a few reinforcements here, a few Reserve men there, when war comes—the events of war follow with the greatest rapidity, and if you are to say, "Oh, that regiment of Volunteers cannot be called out because of business," what General can defend England? It is impossible. The Volunteer Force is part of the Army of this country, and it should be the duty of the Government, in my opinion, to take the force as it is, to see that all that is bad and inefficient is turned out, and all that is good and efficient, well treated. For the last five and twenty years everything has been done that could be done to destroy the respect the men should feel for their Officers and the public for those who do their duty, and every Officer of Volunteers who has served any length of time will bear me out in this, that nothing but the energy, the perseverance, the determination, the hardness of our nature, could have carried us through. The Volunteer Force as an entire army can only be

made use of when it becomes the duty of every man in England to take part in the defence of his country, but in a dozen ways the Volunteer Force can be used, even to the extent of enrolling battalions at once, for a year, or for two, three, or four years; these battalions can be formed out of the existing large battalions in London and in the country. In order to do this it must be distinctly defined upon what condition the men are to serve and the time they are to serve. Most of the men would be artizans and independent gentlemen. The difficulty is the Officers and non-commissioned officers, but this can be got over by making the position a fixed one, and the service a continuous one, a profession in fact, from the time of active service. The non-commissioned officers are perhaps the great difficulty, because they would be loth to give up the professions by which they live, unless they were assured of living by some other. I know, however, as a fact, that many would do this if they were assured that in taking up the position of non-commissioned officers in the British Army they would be treated exactly as non-commissioned officers of the regular Army, but that their services in the Volunteers should count towards their being provided for in old age. If the time has not come for this, then I imagine that the Volunteers can do nothing until that time does come. In conclusion, let every man who reads what is said here to-day, and who reads the admirable paper for which we are so grateful, and which we are discussing, determine never to let his voice rest, never to let his energy stop for one single moment in proclaiming, on all occasions, in the highways and bye-ways, in great places and small places, how foolish and wrong it is to let this great country continue in its unprotected state, and to leave its almost only Army still unprovided for war. The invasion of England is, under certain circumstances, a perfectly easy matter, but it could be made almost impossible. It really makes the heart sick to see the way this rich, lazy, idle country allows itself to continue unarmed and unprotected.

General Sir BEAUCHAMP WALKER: I hardly think it is intended that the speaking on this occasion should be confined to Officers of Volunteers, and, as I have nothing but good to say of the Volunteers, though my experience of them has been very small, for the greater part of my life has been passed out of England, I feel justified in saying a few words on the present occasion. I shall not touch on the several questions, seven in number, with which Sir Edward Hamley has furnished us, because as it is now twenty-four years since I served regimentally I would rather hear those questions discussed by others who are more justified in dealing with them. But there are one or two points on which I tried to obtain some information, and I think I may be able to say a few words with regard to point 4. I under-tand that a scheme has lately been inaugurated for the purpose of providing torpedo corps for four of the great estuaries, the Severn, the Mersey, the Tyne, and the Clyde, and it is proposed that the Engineer Volunteers shall be trained for this service. I think it is most admirable, and I only wish that the same may be extended to all our commercial harbours, because I am quite certain that the Volunteers, who must supplement our very weak military force, will bring an amount of energy and goodwill to it that will make them thoroughly useful to the country. I think further, the Artillery corps should be assisted and encouraged in working in forts contiguous to their headquarters—that is, where they would most probably be employed in the case of war, and it is well they should have some instruction beforehand. I do not see any reason why batteries of 25 and 40-prs. should not be placed in actual charge of Volunteers, in order that they might have a certain responsibility for keeping those guns in proper order, and that those guns should be supplied with harness and other necessities for working, to be horsed afterwards in a manner which we know can be very well arranged, but that the places in which they should be stored should be Government buildings. I do not think any one, although so many gentlemen from the Volunteers have spoken, has adverted to the great value of this paper in sufficiently warm terms. I read a great deal, particularly the military literature of all countries, but I have seldom read a paper which made so a deep impression upon me as that which appeared in the "Nineteenth Century," and which was read to us on Friday last week by Sir Edward Hamley. As I have said before, I have passed a great deal of my life out of England, and in a country where, I am sorry to say, the patriotic spirit is much

more warmly evinced if not more warmly felt than it is in England; and I have been shocked and horrified since I came back to England to see, as a gentleman said just now, what a lazy, selfish, indifferent people we are. Now, in Sir Edward Hamley's paper, there was a true patriotic ring which is above party; and what is more, the mode in which Sir Edward Hamley read that paper to us on Friday showed to me that he thought all that he had written. I was even more impressed by the paper as he read it to us, quietly and calmly on that day, than I was when I read it myself. I am sorry I cannot agree with my friend and comrade here who heaped the most unmitigated rebuke on everybody connected with the War Office.

Colonel IVES: The authorities.

Sir BEAUCHAMP WALKER: The authority with which I had most to do was the War Office; but I have long held to Horace's saying that the shoemaker must not go beyond his last, and therefore I shall only speak of that part of the War Office. I was for seven years Director-General of Military Education, during which time, and at the time my office was terribly overworked, a proposal was made to me that I should undertake the examination in tactics of the Officers of Volunteers. I think my friend General Elkington will hardly say that I evinced any great unwillingness to assist the Volunteers, but the point to which I am most desirous of turning is this. It has been represented in certain military papers which we possess in this country, on very many occasions, particularly when, perhaps, a little sharp hit at the Director-General of Military Education was likely to go down well, that this was forced on the Volunteers by me. That I must positively deny. I wish to take credit to myself for having cheerfully and willingly acceded to their desire, but it was by no means forced by me; if any force was used the force was used against myself. It was impressed upon me that these Officers were so desirous of it that I was begged to make any alterations I could to carry out the scheme. It succeeded admirably. I had my doubts at first. I started with merely asking those Officers to pass the examination laid down for subalterns. They passed the first examinations remarkably well—they were Militia Officers and also Volunteer Officers. A very short time elapsed before I was asked whether I had any objection to obtaining the sanction of the Commander-in-Chief for allowing them to go up to the examination for Captains, and all I can say is, in each successive examination the improvement in their papers showed itself, and that they were, as compared with Officers of the line, extremely creditable. There were not only subalterns and Captains but a very considerable proportion of Officers commanding battalions of Volunteers, who gave themselves the pains and trouble of coming up for these examinations, and they passed them extremely well. I have long wished for an opportunity of saying all that I felt on the subject, and of giving the credit which I considered due to the Officers of Volunteers upon that point. There was one Officer—he was a Militia Officer—who asked to be allowed to be examined in the very last examination before my going out of office, and upon obtaining permission for him to pass the examination in all four subjects, he did so with great credit. I therefore think I am quite justified in saying, from my own experience, that anything that is entrusted to these corps will be carried out with energy and efficiency. And this is the one country in which a force like this could exist without fear of a danger of its being perverted to political purposes. As I have said before, I have lived largely in other countries, but I know in Europe, at any rate—in America I believe they have no reason to fear anything of the kind—in Europe, at any rate, there is no country in which such a Volunteer Force as ours could be organized without fear that it would either be used to oppress the masses or to coerce the Government; and I have no hesitation in saying that, to reverse the figures, I wished that instead of the Volunteers being 214,000 they were 412,000 strong. The real point on which I wish to speak is the title of Sir Edward Hamley's paper, "The Volunteers in Time of Need;" because I do think a great many gentlemen who sit here and in other places are not aware how very possible that time of need may be. I was reading the other day a book recently published, "Extracts from the Diary of Henry Greville," in which he adverts to the very noble speech made by Lord Derby immediately after the Duke of Wellington's funeral, and which contains the following sentence:—"To maintain the security and per-

manence of peace every nation must have within itself those means of self-defence and self-independence, &c., which should not provoke aggression by its weakness, if to that weakness be added the possession of *boundless wealth*. In order to be peaceful England must be powerful, and if England ought to be powerful she ought to be so only that she should be more secure of peace." What made me mark this sentence the more carefully was, that only two or three days before I had been turning over some rough notes that I kept during my twelve years of semi-diplomatic employment in Berlin, and I found there a note of a conversation repeated to me by a very valued member of the Diplomatic Corps of Berlin, which he had had in 1873 with one of the most prominent members of the Prussian military Government, who acknowledged that he had studied the subject of the invasion of England with great interest. He did not consider it likely that circumstances would arise which would render the invasion of England by Germany probable, but he considered the invasion of England by 100,000 men to be by no means a difficult task. Though not considering invasion probable, he mentioned one danger which might prove a temptation—our great wealth; and I find after that record of the conversation these words written by myself: "This is continental morality." Now, before sitting down, I should like to mention a fact which I do not think is generally known. I believe I have every reason for saying that the Intelligence Branch of the Quartermaster-General's Department, which is a most valuable adjunct to the War Office, which was entirely instituted in consequence of a despatch which I wrote on Christmas Day, 1872, at the instigation of a member of the present Government, with whom I was in correspondence, and which, after being returned, to be put into a more official shape than it was when I first wrote it, was read to the Cabinet. The text of that despatch was the invasion of England, of which I had been informed that every detail existed in the General Staff at Berlin. Therefore you may see that this question of the invasion of England is not a mere myth; it is not a mere chimera that foolish enthusiasts talk of, but it is a thing which may happen any day when a foreign nation covets our wealth; and I hope when it comes, that we may not be subjected to a peace with dishonour.

Captain H. C. Boyes (London Rifle Brigade): I must apologize for appearing before you as a mere company Officer, when we have had the valuable suggestions of so many Officers of greater seniority than my own in rank; but perhaps my seniority in point of service may be some excuse, and it may be as well that the views of some of the less important members of the force should be heard. When I tell you that I have spent for the last twenty-five years the greater part of my leisure as a Volunteer, twelve years in the ranks, and for the remainder of that time as an Officer, I think perhaps I may claim some little indulgence from you. We, as a force of citizens first and soldiers next, that is to say of taxpayers as well as of tax spenders, are particularly interested in seeing that the national money is properly applied, whether it is spent on the Volunteers or in any other branch of the public service. When I look back to what the Volunteers were twenty-five years ago, although I admit that there has been a considerable improvement, particularly in the Officers, I am bound to say I think there has also been a considerable falling off in what is of the utmost importance to the Volunteer Service—I mean its physique. I attribute that to the fact that whereas it was essentially a middle class force at the time it was started, it now recruits itself mainly from a class of men whose habits and occupations do not enable them to possess the physical activity and strength of the classes superior to them in rank and wealth. I should very much like to see a return of the middle classes to the ranks of the Volunteer Force, and when I hear a Commanding Officer of Volunteers speaking to us of men in his regiment who go to shoot but cannot hit the target at 100 yards, and he urges that they ought to be taken back to 50, all I can say is, as a Volunteer, I look with the greatest regret on the existence of such men in our ranks at all, and as a taxpayer I consider it is simply a fraud on the country that these men should be allowed to cost us their 30*s.* a year. I would certainly suggest that a very much more stringent physical test should be applied to the rank and file, and to the Officers for that matter, of the Volunteer Force, so that if we are paying we should know we are getting something for our money that is worth having, and that we are not merely increasing the number of the Queen's bad bargains.

If we are to have an increase of money, the question arises to what purpose shall that money be devoted? And here I must say I warmly agree with the remarks that fell from Major Napier at the last meeting. An increase of the capitation grant to the extent of 10*s.* each efficient will be an increase which is worth one thing to one regiment and another to another. There is no doubt that here in London—and I think I may say in most of the larger towns—the great want of the Volunteer Force is proper ranges and proper headquarters. These, of course, are very much more expensive in London than in the country, and though an increase of 10*s.* per head might work the thing in the country, it would not do very much for it in London. Now, speaking as a taxpayer, and therefore as an economist, I want to point this out, that if you add to the capitation grant 10*s.* per head for each efficient, you are simply paying money which is spent and gone, and done with. If you purchase for the Volunteers what we think we are entitled to ask for, namely, ranges, drill-grounds, drill-sheds, and so on, you are not spending, but you are simply investing; you are not getting rid of national money, but you are acquiring national property which will be of the greatest value. As London continues to increase, so the land in the neighbourhood continues to increase in value, and it will not be a bad investment if the Government takes into consideration this most valuable paper of Sir Edward Hamley's, and acquires sites round London for some of the positions that he has pointed out to us. On those sites we might have ranges and drill-grounds, and then we should be made to feel that our services are of some use to the country, and have some value and meaning in them. How little they have at present may, perhaps, be gathered from this fact, that I believe, as I have said, after the sacrifices of time and money involved in twenty-five years' continuous service, which I do not in the least regret, I find, when I enquire how my services are to be made available in case of need, that by the mobilization scheme which appeared some little time ago in the "Army List," in case of invasion my place for assembly is one of the forts on the Medway; I am also told that I belong to the 10th Battalion of the Royal Rifles, whose headquarters are at Winchester, my own regiment being at Finsbury in London, and that the Officer who commands it as Brigadier is the Officer commanding the Grenadier Guards. What can I expect if I am to be called out to take part in field or garrison operations from so chaotic an arrangement as that? Does it mean that there is any system at all beyond a system of calling a number of things by a number of fresh names, and thus trying to delude people into the idea that you have reorganized and remodelled your military forces? I ask that I may feel myself a component part of some consistent and proper scheme of national defence. I speak for thousands of men who, like myself, have devoted as much money and energy as they have been able to spare for many years to the service of their country as Volunteers—we ask, and we think that we have a right to ask, as a reward for our services, that by proper organization those services may be made of some real use to the country.

Major-General Bray, C.B.: My Lord Wemyss and gentlemen, I would follow very much in speaking on this subject the lines taken by Sir Beauchamp Walker, and before proceeding to make my observations, I have to congratulate this assembly on the admirable paper presented to it by Sir Edward Hamley. I have not the advantage of the General's acquaintance except as a soldier, knowing him as a most learned soldier, and a most careful soldier, and I should say, without hesitation, absolutely the most scientific soldier of the British Army. This Officer, of course, in making a speech before this assembly, and reading a printed paper, has to bear two or three things carefully in mind which I, as an ex-Officer, have not to bear in mind. Sir Edward Hamley is a distinguished soldier who has shown that not only can he use his pen, but also his sword in the field at the proper time, and I hope that Sir Edward Hamley will have an early opportunity, looking at it from merely a soldier's point of view, of following up that little affair at Tel-el-Kebir, in which he showed how admirably he could handle a Division of the British Army, and how well he did it. As regards the subject in hand, I gathered two or three things from the speeches made by Volunteer Officers on this occasion. First, that the Government do not give them money enough to become good soldiers, but as the Government does not give money enough to anybody, but starves everybody, I do not see that they are a bit worse off than anybody else! The other point I

gathered was that it was a question amongst themselves whether the Volunteers should be allowed to shoot up to 300 or 400 yards. That is a mere question of detail that ought to be arranged by the General Officer commanding the Division at Aldershot and the Staff, who, together with a few intelligent Volunteer Officers, should arrange at what distances they should shoot, and it should not be a question brought before this assembly at all. The Volunteer question has gained an intensity within the last few days since we heard Sir Edward Hamley's paper read. At that time the word *will* was said, but now the word *shall* has to be used in the place of *will*. The outlook of this week has become the most extraordinary and wonderful probably that we have known in our own time. We are threatened with war in the north, in the east, in the west, and in the south all at the same time. The Volunteer question, therefore, I say, has become intensified within a few days, and it is not what these Volunteers will do, but what they *shall* do, what they *must* do. This strain has come suddenly, but the strains of war invariably have come suddenly, but not unforetold. This matter has been foretold for months, for years; but owing to the recent dislocation of the Army, the weakening of the Navy, and the whole military forces of this great Empire, they were bound to be strained suddenly, as they are at this moment. The time has come, and they are strained, and it remains to be seen whether they are equal to the strain that will soon be put upon them. We trust they are, but it is not for us to prove that: it is for the Government of the day, whoever they are, to prove that the Army and Navy are equal, and ready, and able to defend the interests of this great Empire. One thing you may be sure of—that if you fight Russia and France combined you will have not Volunteers only, but you will have conscription before two months of the war are over. We have got beyond volunteering altogether; conscription must come: it is quite impossible to suppose that this nation can fight two great powerful nations like Russia and France combined without conscription, that is, calling upon every able-bodied man who can fight to fight. Recollect that in 1803, when the Great Napoleon was at Boulogne threatening invasion, you had two millions of soldiers and sailors under arms, and now you talk of 212,000 Volunteers ready to take the field! Not only that, but I gathered from one of the Colonels of the Volunteers that they were not ready to take the field, and they were not quite sure that it would be even a good thing for them to go into garrison duty at Portsmouth. I therefore think that we have got beyond all these questions; and you must recollect that conscription even, where every man in every rank of society must serve, will not save you from having a standing Army for the Colonies and for India. No nation in Europe serves under the same conditions that we do. We serve under the conditions that one-third of our entire force is to be located in India and one-sixth in other foreign countries for years. No such rules exist in any other armies in the world. You must always have your standing Army for foreign service, as well as conscription for service at home with liability to serve in war. Now, about the Volunteers. If we come to conscription will the Volunteers be exempt? I say, No. Every Volunteer who has served efficiently for six years, more or less, say five, say six, might be passed by as a conscript, but nothing else should give him exemption. There are Volunteers in other parts of the world, in Belgium and other places, but their volunteering does not completely cover them from the conscription: they must stand in the ranks of their regiments in time of war, and that will have to be done here. Do you suppose that because you enrol yourself as a Volunteer, and make yourself efficient in shooting, hitting bull's eyes at 300 or 1,000 yards, and winning silver mugs or pewter mugs at Wimbledon, that that will save you from the conscription and the duty that you owe to this country by fighting in its ranks beyond the silver streak? I say, certainly not. Then, as regards the Militia. If we go to war (which looks so threatening that I cannot understand how we are to get out of it), the Militia will have to be balloted. The mere fact of their being Militiamen does not save them from the ballot. According to the laws of England, we have a right to ballot for the Militia, that is conscription for the Militia, and these men must go and join their battalions whether they like it or whether they do not. What you have to do is to prepare, as soon as possible, to show your hundreds of thousands of men under arms ready to meet all the combinations that may be brought against you. You will have to call out your Indian

forces, and show Europe what you can do with them. Bring them to the Mediterranean and garrison Malta and Gibraltar with Indian troops, Sikhs and Ghoorkhas, and then you will astonish Europe. You have also to call out your Colonial forces. I am glad to see they are calling themselves out. That is the silver streak in this great crisis—in affairs of the Empire—that the Colonies are calling themselves out, and rallying to your standerds to fight under them, and to fight for you. Those Australians are what I call Volunteers! that is, men ready to go out with your forces to the Soudan, India, or elsewhere, to stand shoulder to shoulder, and show what England can do at the present critical time against all combinations, and every combination of false friends and false allies.

General LOWRY, C.B.: After nearly seven years of hard and very irksome service on *the shelf*, I can scarcely feel to have a strong claim to take part in this discussion, and yet the subject so ably and so opportunely brought before us by my old friend General Hamley is fraught with such import in its issues to the country, I cannot be altogether silent on it. During a long term in command of a regiment of the line I had a good deal to do with auxiliary forces both in British North America and here at home, and it has often fallen to my lot to inspect Volunteer corps. In no spirit of flattery, but as a simple statement of fact, I aver that no duties I have had to perform have ever been fuller of interest and satisfaction to me than those in connection with that arm of the public service. I found a zeal and earnestness of purpose, an appreciation of any pains taken for them, or encouragement shown to them, truly admirable. My lord, it seems to me the Volunteer Service has so established its character as a permanent institution of vast importance to the nation that greater recognition, encouragement, and development are urgently demanded, and that an increased capitation grant, providing full and complete equipment—ready at hand—for every man worthy of its use, a good drill-shed, and safe store—as in Canada—due provision for rifle practice, and enlargement of the force to the extent indicated by Sir Edward Hamley, may be taken as the proved necessities of the time. I take it that the outcome of these large gatherings of men of all branches of Her Majesty's Service in this hall is the expression of a practical unanimity of feeling on most, if not on all, of these points. And surely now—now if ever—the subject should be well "within the range of practical politics." "That first line of defence," which Sir Edward Hamley has so happily emphasized as "the respect of Europe," not less than the firm resolve of the nation not to prove unworthy of those young, but great Colonies which, springing from us, have sprung so nobly to our support, all proclaim to us the vital importance of immediate better preparedness by land and sea! They tell, in a way we may not misinterpret with impunity, that not only our Military, but our Naval Volunteer resources should be promptly and largely developed—

Then "Away
With the oft-proved futilities of delay;
Too long a land may trifle with its fate
Till angered destiny writes *at last* TOO LATE."

Mr. J. R. MACDONNELL, late Major 19th Middlesex Rifle Volunteers: I have been so long and intimately connected with the Volunteer Force, and I have had so much communication with Volunteer Officers in all parts of the country, that I think I ought perhaps to say a few words. There is one point which has been omitted in the congratulations which have been so heartily addressed to Sir Edward Hamley, and so well deserved, viz., the recognition of the extraordinary labour that he must have taken in order to enable him to describe, in the way he has done, the very peculiar constitution and organization of the force. I scanned it very closely, and I can hardly find any point that he has omitted, or any detail, however small, in which he has been wrong. It is a very remarkable thing indeed. I could hardly have believed that so perfectly accurate and complete a description of the organization of the Volunteer Force could have been given by a writer who has not himself belonged to it. On the first point, I will say I agree with every word that fell from Colonel Du Plat Taylor in protesting against the retrogade proposal to restrict Volunteers' shooting to the shorter ranges. I am quite sure that if the Volunteer Officers were encouraged to go to Hythe, as they were in the early days, and if the

absurd regulations now in force as to shooting for efficiency were altered, we should get the standard of shooting raised to what it was in the beginning without any difficulty. I am quite sure the Volunteers ought to be able to shoot at least as well as the Regular Army, and they would do so if they were properly instructed. On the second point, I think Sir Edward Hamley has been perhaps misunderstood. Many of the speakers have supposed that he meant that the Volunteers on an emergency were immediately to occupy the garrisons. I believe he meant that they should be practised and rehearsed, as it were, in garrison duty, which I am quite sure they would willingly do, if facilities were given to them. As for mounted infantry, I think that is certainly a question of money. Most of the corps of mounted Volunteers were broken up because the expenses were too heavy, but I must protest against the suggestion that the Yeomanry should be turned into "mounted infantry," if that means, as I think it does, taking away their sabres and spurs, and putting on gaiters. I agree with Colonel Knollys that a cavalry feeling exists strongly among them, and I do not see why they should not wear their spurs and boots instead of gaiters. With regard to the fourth point, some brigades of Artillery Volunteers have guns of position, and have shown that they can take care of them. Sir Edward Hamley speaks of extending the term of service. I do not quite know what that means, but if it means that the conditions of Volunteer service are to be changed, I should venture respectfully to protest against it. You must retain the *minimum* of service at a very easy standard for those men who are engaged in business. There will always be plenty of men who can attend a great many more drills than those which are actually required. The fifth and sixth points refer to the desirability of increasing the number of Volunteers in certain districts. I do not think that there need be any fear that if the nation were actually engaged in a great war there would not be as many Volunteers as could possibly be wanted in any given time. But I may point out that the number of Volunteers in any given county or district cannot be settled (except as to a maximum) by regulation. You may say the county of Essex shall not have more than 6,000 Volunteers, but you cannot say you must have 6,000 at least. As to the last point, I think that any increased assistance should be given in *money*, and that its expenditure, though carefully supervised by the Government, should be in the hands of the Commanding Officer. In the battalion in which I held a commission I believe all the men now have great coats, but the corps wants more money badly for something else. Indeed almost all Volunteer corps want a little more money, but they do not necessarily want it for the same purposes. If, for example, they have invested money in great coats, they perhaps want better headquarters in which more great coats can be stored. I think every Commanding Officer should be allowed to judge what he can best spend his money upon. Of course he must not be allowed to spend it on superfluities.

Captain G. DRINKWATER, Inns of Court Rifle Volunteers: I am very much surprised to find it argued here that the range should be limited to 300 yards. This appears to be throwing away the lessons taught us in modern warfare, and also throwing away one of the great advantages of the defence. No one knows those advantages better than Sir Edward Hamley, and I regret very much that he feels himself obliged to state that he thinks the range should be so limited, for this opinion of his must arise from the scarcity of butts, or some other similar reason. The bad shooting in the force no doubt arises from the difficulty that there is in finding ranges, and not from lack of zeal to become good shots. It is very important that the class shooting should be carried out, but at the same time, if the position drills are properly conducted, and there is practice with the Morris tube, no man who failed with a little practice to hit a third-class target at 300 yards is worth retaining in the force. There is one difficulty about this third-class practice with regard to the range which might certainly be got over by the Government opening the Wormwood Scrubbs range free of cost for the third-class firing of the whole of the Metropolitan corps. The firing might be rendered safe by means of the Belgian principle of firing through sheds. This would get rid of the necessity of having third-class shooting on other ranges, and would give increased facility for medium and long-distance shooting. The advantage of medium and long-range firing I need not further dilate upon, but every shooting man knows that the longer the distance

practised at, the easier it is to shoot at the shorter ranges. Many people who want to make bull's-eyes at 500 yards practise beforehand at 600 yards, and any man who has gone through the course of training necessary to shoot well at 1,000 yards can easily shoot at any other range that may be required of him. As to the positions, it is suggested that we should occupy the blue line shown on that plan; this, however, passes through a country thickly studded with villas, houses, high walls, gardens, &c., and I should be glad to hear from Sir Edward Hamley whether he considers it feasible that the Volunteers at the present time should be practised in occupying the positions which he has suggested. I raise this point in the hope that the scheme may be carried out, because I feel that were we practised in the proper positions, it would be of very great advantage to the force. If the scheme be feasible, the authorities have only to suggest that the country and the roads should be mapped out by the Volunteers. I believe in a month this would be accomplished. There has already been some experience of mapping on the north-west of London, and nothing could add to the knowledge of the country which each battalion has to occupy, more than that its Officers should be practised in road traversing and mapping the particular district allotted to them. As to raising additional Volunteers in London, I feel certain that, in the event of any outbreak of war, so many old members of the corps will flock together that there will be plenty of men for any contingency that may arise, but as to a Reserve being formed, it has often occurred to me that if the old members of the corps, who have served say at least three years, would assemble once a year at the inspection, and so keep up a connection with their old corps, and be ready to turn out if they were wanted, it would be a very great gain. As to the increased funds, if the Volunteers were given great coats, ranges, drill-halls, &c., free of cost, I do not know that there would be any necessity for an additional capitation grant; but if they are not given them, then I would suggest that, to find out what sum is required, the Volunteer corps should be called upon to furnish a statement of the subscriptions which they receive from their Officers and friends, and by comparing this Return with their expenditure one would be able to see what the corps actually cost. I do not think there will ever be any want of Volunteers in time of need if they know accurately the duty that is asked of them – that they are not required to feed the Army, but that they are wanted for the defence of their homes and hearths—that the Militia and the Line may be sent out of the country, and the country left in the sole charge of Volunteers. Nothing, to my mind, could contribute more to the establishment of a feeling of reality in the Volunteers than this admirable paper that Sir Edward Hamley has read, and I feel sure that every man in the country who has volunteering at heart will thank him very cordially for his paper.

General ERSKINE: My lord and gentlemen, as I find that this discussion is not to be confined to Volunteer Officers, I gladly avail myself of the opportunity of speaking on a subject in which I have for many years taken a great interest. In the first place, I desire to join in the chorus of applause which has been accorded within these walls to Sir E. Hamley's paper, and to state that I consider that the nation owes him a debt of gratitude for having brought in a masterly manner before the public the present condition of the Volunteer Force. Sir E. Hamley has very wisely, I think, drawn up a scheme comprising the several points which are to be taken for discussion, and to these I will adhere in the few remarks which I propose to make. The first relates to musketry practice. In my opinion what Sir E. Hamley has written on this matter has been misunderstood. His meaning seems to be that the musketry instruction should be carried on in such a way as to ensure every man who takes his place in the ranks being able to fire accurately at the shorter ranges, in fact to make the average Volunteer an average shot; but this need not entail any discouragement on those who have a natural aptitude for shooting, nor throw any obstacle in the way of their attaining the greatest possible proficiency at the longer ranges. If this is Sir E. Hamley's view, I think that he is quite right. The second point relates to the instruction of Volunteers in the occupation of military positions and the performance of garrison duties. Here I consider that Sir E. Hamley's suggestions are most valuable, and I do not see that there would be any difficulty in carrying them into effect, if means were provided for compensating the owners of property for any damage that might arise from the use of their land.

But while I should be glad to see Volunteers taught to occupy military positions, I trust that this practice will never be allowed to involve the neglect of their instruction in drill. This instruction would, of course, be confined to the simple movements necessary for troops in the field, but it should be thorough. This leads me to speak of the "ancient superstition" of marching past. I am not disposed to say a great deal in its defence, nor to advocate over-much attention being paid to it, but at the same time I think that it has its uses and is not a mere matter of military display, and I am quite sure that at our large reviews it may, with proper management on the part of Staff Officers, be carried out without any material loss of time, for, as the troops must move to the ground on which they manœuvre and return from it, why should they not in either case march past the reviewing Officer? Whilst on the subject of these reviews, I must say that, in my opinion, what chiefly detracts from their usefulness and leads to loss of valuable time is the crowding of spectators. The fact is, that the troops are so hemmed in by their friends that they cannot possibly see their enemies. The third point refers to mounted infantry, and I quite concur in the view taken by several speakers, that this is purely a question of money, for there cannot be a doubt that every Rifle Volunteer Corps could furnish a force of mounted men if the matter of cost did not stand in the way. In the fourth paragraph the subject of guns of position is brought forward. In the early days of the Volunteer movement guns of this class were issued to several Volunteer Artillery Corps, and I think that no difficulty was experienced in ensuring proper care of them. At any rate there cannot, I should say, be any doubt that guns of position are those which are best fitted for the use of Volunteer Artillery in the field. Paragraphs 5 and 6 may, I think, be advantageously considered together, insomuch as they both involve the principle that every locality should have a Volunteer Force in exact proportion to the requirements of its strategical position. Such an arrangement would no doubt be very desirable, but we can hardly be sanguine of its practicability, if we remember how Volunteers are raised. Perhaps the best way of obtaining the numerical increase which Sir E. Hamley considers necessary would be by means of a reserve. For military purposes, whether strategical, tactical, or administrative, reserves are always useful, and I do not see why we should not have a reserve for the Volunteer Force as well as for the regular Army. Several preceding speakers have stated that there are now in the country a large number of men who have been trained in the Volunteer Force, and who would flock back to it if the nation were in danger. I quite agree that this is so, but to my mind it would be a mistake to postpone the re-enrolment of these men until a time of emergency had arrived. On the contrary, I think that those of them whose services are required should have at once their names placed on the roll of some Volunteer Corps, but of course in a separate category from what, from want of a better term, I would call the active list—and that for their use there should be always in the stores of the corps a proper supply of arms and equipment. By some such arrangement as this a Volunteer Reserve would be a reality on which dependence could be placed in the hour of danger. I come now to the last point of discussion, and, in regard to it, I have no hesitation in saying that the first use to be made of any available funds should be to complete the personal equipment of our Volunteers, for until this is done they cannot be considered an efficient military force. But there are other requirements which should not be lost sight of. For instance, a Commissariat, a Transport, and a Hospital Service are still wanting. Now, I would not recommend that for these the Government should provide a stock of *matériel*, for this would be easily obtained from the resources of the country when it was required. But it is otherwise with the *personnel* of these services, and I think that corps representing them should be formed at once. This could be done at small expense and without difficulty, for there must be in every locality plenty of men specially qualified from the nature of their avocations in civil life who would readily enrol themselves. I have now gone through the several subjects suggested for discussion, and I should therefore bring my remarks to a close. But before doing so I wish to state that to those who, like yourself, my lord, were instrumental in building up the Volunteer Force in its earliest days it is extremely gratifying to find so eminent an authority as Sir E. Hamley bearing testimony to its value, especially as there

were in those days not a few who were never weary of telling us that the Volunteer movement would not outlive the occasion which had called it into being, and that the men who had taken up arms ostensibly in defence of their country would soon throw them aside in exchange for some other plaything. The event has proved the falsity of these predictions, and it is now abundantly clear that the Volunteer Force has become one of the institutions of the country. I trust, my lord, that the outcome of this discussion, which, in my opinion, has been ably conducted, will be the inauguration of measures calculated to complete the military efficiency of our citizen army.

The CHAIRMAN: When General Erskine refers to early recollections I am quite sure that those who had to do with the force in those early days will never forget how much it owed to General McMurdo.

Colonel RAY, 3rd Middlesex Artillery Volunteers: I wish, with your lordship's permission, to refer to two points. First of all with reference to the fourth point, I do not think that there were ever more than half a dozen regiments in the whole force who possessed guns of position. We have been told that at one time they were tolerably plentiful all over the country, but those were the old smooth-bore guns. The rifled guns seem to be so precious in the eyes of the War Office that they will only allow them to be under the charge of Volunteers in very exceptional circumstances. Of course it is necessary to have the guns and stores in a place of safety, and that can be done in some instances. In my own regiment we have no less than eighteen guns under our charge, and it was necessary to provide places of security for them. We have found it necessary to build three drill-sheds costing about 3,000*l*., and the rent we pay annually is about 350*l*. I have often been asked how we managed it, and I have replied that we simply adopted the plan that is sometimes adopted in building churches,—we build the sheds first and try and get the money afterwards. The first of those sheds was commenced about twenty years ago, and the last of them I am afraid is hardly paid for yet. With regard to the carriages there are really plenty of carriages in store; I have good authority for stating this, though I am not at liberty to mention names—there are plenty of carriages in store which with some slight alterations could be made suitable for 40-pounders, in fact all the 40-pounder guns that are issued to Volunteers are issued on these converted carriages. The only other thing I wish to touch upon is, the danger which is likely to ensue in the event of some of those wonderful plans we have heard of lately of improving the Volunteer Force being carried out. I think the result would be in all probability that the force would be "improved" off the face of the earth. It should not be forgotten that the Regular Army is the sword, so to speak, of this country, and that we Volunteers are the shield. The sword is an offensive weapon, but the shield essentially defensive. You may use the sword for defensive purposes but you cannot use the shield for offensive purposes, and, although the Force may be improved and reorganized to a certain extent as Colonel Ives said earlier in the day, we must deal with it at this critical moment as we find it, and not try to improve it over much.

Vice-Admiral BOYS: Perhaps some here may be surprised at an Admiral getting up to speak upon this subject, but I may be excused when I say that, with the exception of our noble Chairman and of the gallant Officer who opened this debate the other day, I am, perhaps, the oldest Volunteer Officer present in this room. In the year 1859 or 1860, I was instrumental in raising the Volunteer Artillery of the Cinque Ports, of which the late Lord Palmerston was Colonel. Being myself a gunnery Officer, I was allowed to carry on the instruction of my battery, both in gunnery and in small arms. I was also one of those Officers who gave evidence before the Royal Commission in 1862, and I believe the evidence which I gave, in conjunction with evidence in the same direction given by others, led to the capitation grant that has from that time been granted to the Volunteers. I have always taken great interest in the Volunteer movement. The first artillery prize competition was carried on by the Cinque Ports Volunteers on the shingly beach at Rye, under my supervision. General Erskine mentioned that 18-pounder guns of position were supplied to Volunteers. My battery had two of them, but in those days we had to pay for everything connected with them; we had to pay for the transport of the guns from Dover, we had to erect our own platforms, &c. Fortunately we

were a pretty well-conditioned corps, and were enabled to do it. I was very disappointed to hear that so little has been done for the Volunteers since those days in the way of personal equipment, and I should be very glad if anything that we could say or do here would assist the Volunteer movement to get the additional capitation grant which so many gallant Officers seem to think necessary—the additional 10*s*. I quite agree in that, and I think it should be put at the disposal of the Commanding Officers under certain restrictions, because even Commanding Officers of Volunteers may have fads. There is one corps that our gallant lecturer has not alluded to—I mean the Naval Artillery Volunteers. I think the Royal Commission of which I spoke, recommended, although in a slightly different form to that which exists now, that in certain batteries, detachments of Artillery Volunteers should be trained and told off to work ships' guns, and that gun-vessels should be stationed at the ports for that purpose. That was the original proposal as to the Naval Artillery Volunteers. At this moment they have no capitation grant at all, and the only wonder is that they still exist. I know that some corps have expressed an opinion that they do not want a capitation grant. Now, in my opinion, a corps that does not want a capitation grant does not contain the right sort of men for Volunteers. I think you want men of not quite such a good social status to form ordinary gunners in a Volunteer corps. Our gallant lecturer has taken exception to the generally accepted statement that "the Navy is the first line of the defence of the country." I am very much inclined to agree with him, for I certainly do think the position of the British Navy in time of war is not at home defending our own ports, but in front of our enemies' ports, and defending our commerce on the high seas. It is a question whether the Navy is in the condition to do so at present, and for my part I do not think it is. I will just mention a circumstance that I only heard yesterday morning with regard to a Volunteer Navy—that in one instance of these new fast merchant ships that have been taken up by the Government to be armed as cruizers, the Captain and Officers of the ship as they are on board (including engineers) and the crew have volunteered to a man to serve under the naval Officer appointed to command, immediately the pennant is hoisted. I say that is a great thing to hear. I am perfectly certain that the Volunteers themselves know their *rôle*, which is not that they are to play at soldiers in peace time, but that they are to do a soldier's duty when they are called out in time of war. They deserve every encouragement, and I can only recommend them to persevere.

Lieutenant-Colonel W. Hope, V.C., London Artillery Volunteers: I so entirely agree with everything in Sir Edward Hamley's paper, that to illustrate this I will mention what I did when I found myself, as an old soldier, in command of the Surrey Artillery Volunteers. I took over the command in the month of February, shortly before Easter. I knew absolutely nothing about the habits of Volunteers except what I had casually seen from time to time in the newspapers, so I asked them what they had been in the habit of doing at Easter, and they said some years previously they had had some of these wonderful smooth-bore guns that have been alluded to—I think they were 4-pounder cast-iron ships' guns put upon travelling carriages, absolutely useless for any purpose whatever—and took them once to Dover and once to Brighton, but on the last occasion that they had gone to Brighton they had no guns at all. This did not seem to me to be the purpose for which garrison artillery were organized, and I hunted out in the Army List where we were supposed to go in case of invasion. I found that we were told off for the forts on the Thames and the Medway, and so I made an application to take them into garrison at Sheerness, but I found that there was no room, so I marched them to Sheerness to get a little gun practice. I then looked about to find if there was any other place to which I could take them the next year, and I found a desolate place opposite Sheerness known as Grain Fort. So next year I took them to Grain Fort. It would only hold a certain number, and in subsequent years we overflowed into Slough Fort, a still more desolate place, wholly uninhabitable—one of the new scientific forts, but absolutely uninhabitable from every point of view. I now command the City of London Artillery, of sixteen batteries, and we cannot squeeze into Grain Fort, so for the last two years we have gone down to Dover, and there, as previously at Grain Fort, have

done most useful work in the direction pointed out by Sir Edward Hamley. We go regularly into garrison from year to year. Every man tumbles into his place. The non-commissioned officers know exactly what to do, and they are now a very useful brigade of garrison artillery. Last year at the sham fight they simply manned the guns in Fort Burgoyne, but this year the troops for the defence were so short-handed that I was requested to detach 400 men as infantry, and with the remainder I served, I think, ten 40-pounders, and two 16-pounders. One thing that struck me very much in Sir Edward Hamley's paper was this, that he said he believed there was an unlimited number of 40-pounders practically available. May I ask whether he states that of his own knowledge?

Sir EDWARD HAMLEY: Yes, at least on the very best authority. I do not mean to say I have seen them, but I understand there are as many as 800.

Colonel HOPE: I am very glad to hear that, because I have not yet been able to come across anyone who has seen them. I have myself applied again and again for one or two 40-pounders for the purpose of instruction. I have twenty-three guns in charge, but only two of those are 40-pounders, and I have to take recruits down for shell practice with 40-pounders who have never seen a 40-pounder before. I have made urgent requests for 40-pounders, but have never been able to get them. One year I was requested to go to Brighton. I said, "I have no objection," and I said, "I have half a battery of 40-pounders, and would take eight batteries of men if I could get seven and a half batteries of guns," and I sent in an application for them. We had some weeks' correspondence, and eventually I was offered six naval 20-pounders. I should really like very much to know whether the 40-pounders exist or do not exist. They ought to exist. I believe we have paid for them, but I really do not know whether they are in material existence. There is one matter which Sir Edward Hamley pointed out which is very interesting and very true, namely, that Volunteers, if in possession of a sufficient number of guns of position, ought to be able to win in the artillery duel which as a rule precedes a battle, because they ought to be able to move heavier ordnance than troops freshly landing, and landing with only field pieces. But even if we had the 40-pounders, I am very much afraid that the 40-pounders would not be able to hold their own against the field guns of the French, the Germans, or the Russians. The 40-pounder Armstrong was originally intended for a 7-lb. charge of powder, but from the imperfect system of breech construction, the 7 lbs. of powder had to be reduced to 5 lbs., and the velocity is so low—only 1,180 feet—and the trajectory so high, and the range so short, that I am afraid the modern field pieces with which continental armies are armed would silence the 40-pounders from a distance before they got within the range of the 40-pounders. I should like exceedingly to know whether these 40-pounders have an existence or not, because I think I could modify them,—and I should be delighted to do it for the benefit of the Service—by applying my own system of breech to them, so as to increase their velocity to 1,600 or 1,800 feet a second, or more, increasing the charge of powder to 10, 12, or even 15 lbs. instead of a miserable 5 lbs., and it could be done at a very little expense and very rapidly. Certain of the 40-pounders have had the trunnion piece slewed a quarter of a circle so as to bring down the breech slot to the side of the gun instead of the top, for the purpose of mounting the guns on "overbank" carriages, for the protection of the men who serve them. If that were done with all the guns, the slot could easily be altered to admit my breech-piece and my cartridge. That would not be a costly operation, and they would all be done in a very few months; but the first thing is to ascertain whether the guns exist.

The CHAIRMAN: I will ask the question on Friday.

Colonel HOPE: I trust your lordship, who knows the ways of the War Office, will repeat the question until you get a distinct and categorical answer. The fact is, the Ordnance Department is a very curious department. It is responsible for the production of everything required by the Army, and it seems to me that the unfortunate people at the head of it cannot possibly have time to look after the various things that they are supposed to look after, and they are obliged to depute others to do so; hence we saw that when the swords were tested the other day at Aldershot, more than half of them were found faulty. Those swords must have been tested by *somebody*, and it seems to me that that somebody ought to be tried for

his life. We hear stories of defective arms and ammunition. I won't revive the painful story about the Boxer cartridge, but still it was the Boxer cartridge that jammed the other day in the Soudan, and it seems to me the time has come—when we are threatened with a European war such as we have never had before, and threatened with a combination of France and Russia, which would certainly mean invasion—the time has come for investigating very closely into some of these old and modern scandals, and trying some of the persons who are responsible for them for their lives. It certainly seems that no worse crime can be committed than the supply of faulty arms to Her Majesty's troops.

Lieutenant GEORGE H. HOSTE, 12th Middlesex (Civil Service) Rifle Volunteers: At the present very advanced period of to-day's discussion, I feel sure that it is your lordship's wish, and that of all present, that my remarks should be compressed within the narrowest possible limits. They will be entirely confined to that section of the force with which alone I have any special acquaintance, viz., the Metropolitan Volunteers. Sir Edward Hamley has paid these same Metropolitan Volunteers the very high compliment of assigning to them the responsible duty of guarding the treasure-chest of Europe, London. He has gone further, and has indicated how they may best perform this duty. Deprecating the establishment of detached fortifications on a large scale, he has selected several strategical points at which the Metropolitan Volunteers might be concentrated with advantage, Willesden, Highgate Junction, and Stratford on the north, and Woolwich, Croydon, and Wimbledon on the south Finally he has designed a line of positions connecting these strategical points, and has suggested that the Metropolitan Volunteers should take every opportunity of acquainting themselves with this line. I am sure that the best return which we can make to Sir Edward Hamley for the very high compliment which he has paid us is to meet him half-way in his scheme, and go out and occupy the positions he has marked out for us. In the second heading of the list of suggested subjects of debate we are asked how the occupation of these positions can best be carried out regimentally. My own impression is that it can best be done by accepting the several strategical centres which have been named, and establishing at each one of them a standing Camp of Instruction in which the Metropolitan Volunteers might be grouped in brigades or even in divisions. At present we have isolated *Regimental* Camps of Instruction, most of the sites of which are not selected on account of their strategical capabilities. Some of them are surrounded by walls, and are certainly not defensible in any way. If, instead of this rather haphazard system, the Volunteers of Middlesex, Surrey, and West Kent could, with the sanction of the War Office authorities, arrange to pitch their Camps of Instruction on these six strategical points (some at one and some at another) the brigades or divisions thus formed could then be exercised—as part of the week's or ten days' training—in taking up their positions on the lines designed by Sir Edward Hamley, and I venture to think that their military efficiency would not be diminished if during their period of training they were to discontinue some of that close order drill with which they are now so much occupied prior to their regimental inspections, and were to go out in large bodies to master the details which they would be called upon to perform in actual time of war.

Tuesday, April 28, 1885.

ADJOURNED DISCUSSION ON SIR EDWARD HAMLEY'S PAPER.

Captain DRURY, 2nd Battalion the Queen's Own Royal West Kent: My lord, I wish to say a few words about the second proposition on the paper—"How the proposal to exercise the Volunteers in the occupation of positions, and in garrison duties in fortresses, might best be regimentally put in practice." I do not propose to offer any opinion as to how that might be done, but simply to state (with the hope that it may be useful to others) what has been done in my own regiment.

Our headquarters are at Blackheath, which is on the map before us, about midway between Greenwich and Woolwich, and we have two companies at Bromley. We have practised on two occasions (and we hope to on other future occasions) marching out from Blackheath to Bromley, taking up a position there as outposts, while the outlying companies at Bromley representing an enemy, have given reality to the occasion. What has been done on these occasions is, the ground has been selected —probably the very ground which we should have to occupy under General Hamley's scheme for the defence of London—a map has been prepared, the ground has been gone over by those Officers who have been detailed to take part in the operation, the contours have been marked, the time for marching from headquarters to the ground has been calculated, and then the time for taking up the position has been notified, and in that way we have, I think, a practical answer to give to the suggestion how the proposal to exercise the Volunteers in the occupation of positions might best be regimentally put in practice. With regard to the second part of the proposal, garrison duties, I have also some practical remarks to make. At Easter this year we did not take part in either the Review at Brighton or at Dover, but by the invitation of the Colonel commanding the dépot at Maidstone, our battalion went down to Maidstone and occupied quarters in the barracks for the four days. We undertook all the duties of the garrison with the regular troops, very few in number, who were there, and also some militiamen; so that we have regimentally put into practice in both of these ways the exercising of Volunteers in the occupation of positions and also in garrison duties. Everybody in the regiment found the experience thus gained most valuable. We are peculiarly well placed for this purpose, and have a great advantage over many of the London regiments, which would, I suppose, have to go to Winchester. I should like to say something about the best way of raising additional Volunteers. It has been pointed out in the paper that Kent, which is one of the counties which would naturally lie in the course of an invading enemy, is deficient in numbers. Kent has always had the reputation of being a military county: the Militia battalions are always very strong. In the time of the Crimea, I believe all four of the Militia battalions volunteered for active service, and I am happy to say we are not deficient in the military spirit still in Kent. There is a movement now going on to raise three additional companies at least in that particular district. This is purely spontaneous. There are districts where it is felt that there are gaps to be filled up. Public meetings have lately been held, and it is not at all improbable that there will be more than three new companies raised in those districts. I believe the spirit which is animating the men of Kent is also animating men in many other counties. Referring to the matter of increased grant, one point seems to have escaped notice, namely, that in the Volunteer Act of 1863, and the 18th Section, there is a provision for a grant of two guineas for Officers and non-commissioned officers and Volunteers to provide necessaries when called out for active service. This is a very excellent provision, and we should be in a very nice state, no doubt, if we had those two guineas handed to us, and when we were called out for active service we had to provide ourselves with those necessaries. A suggestion has been made by a friend of mine that the authorities should discount those two guineas, and that they should give us the amount now in some kind of way, especially as we seem so imminently in the face of the possibility of active service, and as it would not be very much good to us when we found ourselves really called out. We are to render an account of it to the Government, and if any portion of it is not used, I cannot quite understand whether it is to go back to the Government or not. There is here a reserve fund in contemplation, which I think we might ask the authorities to allow us to make use of, under certain proper regulations, at the present time.

Captain COLLYER, London Scottish: I shall not detain this meeting with many remarks. I came here to learn, and not to speak. I think my excuse for taking part in this debate must be my great sense of the extreme gravity of the circumstances in which we are met together, and the belief that anybody, however humble his position in the force, would be justified in saying anything that it occurs to him ought to be said. I think also in some sense company Officers, having a closer touch with the rank and file of the regiment, are perhaps more aware how the shoe pinches, and what men can do and what they cannot do, than Commanding Officers

are often in a position to be. The first thing that strikes one in this discussion is the great discrepancy of view that has been shown by many Officers who have risen as to the general purposes and capabilities of the Volunteer Force. One gentleman, who spoke very ably on the last occasion, seemed to suggest that the first thing to do was to disband the existing Volunteer Force altogether; and he divided it into three lines, the fighting line, the fortress line, and the reserve, and thoroughly reorganized it. However good that scheme may be, there is the old proverb about "not swopping horses when you are crossing a stream;" and there is great danger that if we were at this critical moment to reform our Force, we might, as somebody else said, "reform it off the face of the earth." There is another view which seems to me unsound, and it is one that has been held by many gentlemen of great experience and wisdom, namely, that Volunteers can never under any possibility be called upon for duty except in the actual case of the presence of an enemy in this country, and then only with the most sacred regard to their business engagements. This is, I think, an untenable view. Of course the main principle is that we are to defend our hearths and homes, but it is not desirable that the line of our defence should be on our hearth or in our home; and it is very possible that in order to enable our extremely limited regular and Militia forces to make their line of defence somewhere else, the Volunteer troops would be called upon for something more than perhaps garrison duty. But that brings me to the point which has been touched upon by the last speaker, namely, the feasibility of garrison duty. As he says, the conditions are different between a regiment with a centre like Maidstone and a regiment like my own in London, directed in a mysterious way by the Army List in certain events to go to Winchester. I speak rather feelingly upon this point because an offer was made by Colonel Lumsden, commanding my own regiment, which was different from those made by most of the other Volunteer Colonels, and which presented the great advantage of being practical. He said he could guarantee so many men for daily duties in garrison. That was rather a bold thing to say; but knowing what I do of the men, at any rate about 30 per cent. of them are active young unmarried men who sit very lightly to their business engagements, and therefore that offer may not be too bold. In order, however, to carry it out, it would be necessary to supplement it by this, that the battalion should go into garrison in some barracks. There is nothing more popular in our Volunteer regiments than the drill camp. In the drill camp no men's business arrangements are interfered with as long as the drills are early in the morning and late in the evening; and there is no reason why, if the War Office thought fit to try the experiment of placing, say, the London Scottish, or the Artists, or the Inns of Court, or any of those corps, which to a certain extent are masters of their own time, in garrison, they should not do duty which would give them all the advantages of a drill camp, and at the same time relieve the regular forces. Also in the pecuniary point of view I think it would be cheaper to the country than enlisting additional regular troops, or handing over the duty to the Militia. No doubt the result of a battalion of 800 men being in garrison would be that the employer of labour, the merchant, or the banker, would be obliged to give his employé one day's holiday in a fortnight, and I think if in a critical time gentlemen in the City cannot so far stretch a point for the sake of patriotism the case of England is very bad indeed. There are many other points that have been touched upon, but I feel that more important views will be given, and therefore I will not occupy your time. Indeed, I am under the same difficulty that all Volunteers are, that of want of time, for that is the great thing that militates against our drill, against our shooting, and against everything else. There is one point which I have not yet heard noticed, namely, that one of the most valuable ways in which you could train Volunteers who are pressed for time, and cannot go down to the ranges, is to practise them assiduously with the Morris tube. I know in my own experience how valuable that tube has been in teaching both recruits and Volunteers to shoot up to certain ranges. I think it is not necessary to abandon the long-range shooting when you can practise it, but you can supplement it vigorously by this instructive Morris tube. There are many things that have been touched upon in this discussion—want of money, drill-sheds, ranges, and Morris tubes; but the great thing of all is the need of a strong pressure of public opinion

upon the British employer, and, failing that, though I am most averse to any interference with private rights or the rights of property by legislation, still I think, in case of an emergency, temporary legislation should be brought to bear upon the subject.

Colonel GREENALL, 9th Lancashire: My apology for rising to address this meeting must be that I happen to be one of the original Officers in the service of the Volunteer Force, and that I also happen to be senior Officer by service of the Lancashire Volunteers—a county which, next to Middlesex, contributes the largest number of members to the Force. In the first place, I wish to thank Sir Edward Hamley for the very able paper which he has brought under our notice—an expression I feel sure that every Volunteer will repeat. It is not my intention to detain the meeting, as the points have been gone into so very thoroughly: but speaking for myself I should like to see the whole of Sir Edward Hamley's scheme carried out if it were possible; but it means money, and for the life of me I do not see how the money can be obtained. Of course I am speaking under present circumstances, and as we are at the present moment "at peace"—what might happen in the event of an emergency, such as our being called upon to meet Russia, is another matter—I do not see how it is possible, and considering also the indifference, or, perhaps, I ought to say apathy, of the English public. That which the Volunteers at the present moment most need is equipment, and by that I mean personal equipment as well as regimental equipment. It appears to me that that is the first thing that we should urge upon the Government, and for that purpose I think a round sum, say of 100,000*l.*, should be asked for to fairly equip us in the first instance, and after that a battalion annual grant of 10*s.* There are other matters very much militating against the Force at the present moment. One thing which I do not think has been mentioned is the recognition of the rank and file by the authorities. Up to the present moment, though Officers after a certain number of years' service receive honorary rank, no favour whatever has been bestowed upon the rank and file, who are in reality the mainstay of the movement. I have long advocated the granting of some sort of recognition either in the shape of a good-conduct service medal or a parchment certificate. I also think it would be a very good thing if the Generals of districts were to appoint some Officers as honorary A.D.C.'s on their staffs during their tenure of command. And I would say that in order to bring about a better state of discipline and more drill—and when I say more drill I mean more steady drill, which we all agree to be wanted—the best way to bring that about, as well as a thorough organization, would be by association with the line, by encouraging in every way camps of instruction, and by occasionally going into barracks with the Regulars. There are many other matters I should like to bring under the notice of this meeting, but I will not trespass further upon your time.[1]

Lieutenant-Colonel SHAKESPEARE, late Royal Artillery: My lord, "England expects every man to do his duty," and in that spirit I have come here to-day to advocate an old subject which your Lordship and I had under consideration a long time ago. I will assume in what I am going to say that the regular Army will quit the country entirely, and if that be the case England will be destitute of Royal field artillery. Now, I happen to be about the only man who from absolute practical experience can speak definitely of Volunteer field artillery in comparison with Royal field artillery. I had sent a letter to the "Times" upon the subject of the numerical deficiency of Royal field artillery, and in a few days I received a letter from the Major of the Middlesex Field Artillery asking me to take the command of that regiment. My reply was that the proposal was simply ridiculous, upon which he wrote back and said, "Will you come and see us?" I said that I would, and so they had a parade, and I went and inspected this parade, feeling certain that I should laugh at the whole matter. I looked at the men—I looked at the horses and their equipment, and I asked

[1] What, too, is required is assimilation both in arms, uniform, and accoutrements with the Regular Forces, which should be brought about as soon as possible; and I further advocate that the privileges and recognized advantages enjoyed by Army Officers should be extended to Volunteer Officers in virtue of their Commissions.

myself, "Is there work in them?" I came to the conclusion that there was as far as I could see. I then took them along the road, and I certainly was much surprised at the power of work they exhibited, and the will that there was in these men to do work. I took them down to Barnes Common on that occasion for drill, and was very pleased with their movements. Shortly after that came the Easter Review at Brighton. I marched two batteries down to Brighton, and we arrived without a single accident of any sort, excepting that one horse got a saddle gall; but that horse was treated and was quite ready for work again by the Monday. I had Colonel Todd Brown, of the Horse Artillery, as one of my *aides-de-camp*, and Captain Hobart of the Field Battery as my other *aide-de-camp*. When in action sometimes we had to retire—the Volunteers pressing very hard to capture the guns. In the valley at the foot of Red Hill there was an exceedingly ugly bank, bridge, and brook. My A.D.C.'s thought the guns would never get over it, but I said, "I think they will do anything; let them have a try." They did try, and they got over. One of the teams got down, but they were up again in no time; and that is certainly the sort of thing that happens in the regular Service. Your lordship remembers how well they came up the hill, dropping a trail, each firing occasionally, and then formed line on the top. To show how they worked I may mention that one of the gunners fell and the gun wheels took his busby off, and I should think some of his hair also. I said to him, "You nearly lost your head." "Ah," said he, "I can only be killed once!" This was a London solicitor doing a very large business. The result at the finish was that we had not a saddle-gall, a collar-gall, or anything of the sort. Between that month and the month of September, we marched 180 miles, fired about 400 rounds of shot and shell, and 400 of blank cartridge, and had 14 or 15 drills, while every Saturday we used to have driving drill in the Duke of Wellington's Riding School. The only accident that happened was on one occasion a splinter-bar broke, but it was mended by a local blacksmith. I think your Lordship will remember that at the back of the targets at Wimbledon there is a very rough bit of ground over which you saw the guns pass, particularly across the blind part of it, for the very express purpose of showing what could be done. The value of what I have said is this. It was said, "Oh, no, you never can harness your horses; you will always have saddle-galls, you will always have collar-galls." "No," I said, "look here, my horses have their own collars—omnibus collars." Then it was said, "Oh, you will never groom your horses." "Well," I said, "we can groom the horses as well as the Omnibus Company, at all events," and the proof of the pudding is in the eating—nothing went wrong. Now, I say we can do that again, and if the country is to be divested of its field artillery, I say the sooner we organize Volunteer field artillery corps in and about London the better. Fifty guns can be organized, and the men will work them well. I do not think there is anything more that I can say to advance the interests of this subject, but if at any time I am wanted I shall be very happy to give my evidence, because I speak as a field artillery Officer of very considerable experience in the field, and also with the experience of Volunteer field artillery.

Colonel Sir ROBERT LOYD-LINDSAY, V.C., M.P.: My Lord Wemyss, with your permission I will say a few words with reference to those heads which are put down for our consideration, and which arise out of that admirable article which we have all read with so much interest, written by General Hamley. He first asks the opinion of Volunteers as to the distance at which practice should be carried on. For my part my opinion is that the shorter ranges are as important for Volunteers as the longer ones. I am speaking of Volunteers as a body. The crack shots, I am quite satisfied, will take care of themselves. They are well cared for by the public who subscribe largely for prizes for which they compete, and I may say nobody grudges them the money that they earn and the handsome trophies which they carry off. But, speaking as a Commanding Officer, my feeling is in favour of raising a high standard of shooting throughout the battalions—requiring that every man should shoot into the second class; and with regard to a small increase of grants which it is rumoured, I do not know with what truth, is to be given, I hope it will be given for increased efficiency throughout the Force and for a higher average standard. The present system of letting a man fire away so many rounds of ammunition, and when he has got rid of

his sixty rounds, pronouncing him therefore efficient, is wrong. Every man ought to shoot; if he cannot, he is not fit to be a soldier; and every man ought to shoot into the second class, and having done that, he is so far an efficient soldier and ought to get the capitation grant whatever it may be. Then as to the proposal to make Volunteers do duty in garrisons and fortresses, I can sympathize with a wish that a scheme should be laid down. I do not think our Intelligence Department at the War Office could do better than arrange a scheme. But I must raise a protest against the idea that if ever Volunteers are called on for service, they should be locked up in fortresses or in garrisons. I believe there is no body of men who could be brought so rapidly upon any military point when they are wanted as the Volunteers, and a scheme may be laid out and it ought to be criticized, and I hope if it is laid out, we shall have an opportunity of seeing it and criticizing it. I hope then in case of emergency—short of actual invasion, the Volunteers will be left in their own districts—in their own neighbourhood—and in their own towns, to carry on the ordinary work which belongs to them, and that a plan will be devised by which they can be held ready to be rapidly moved by trains and put down wherever they are wanted; and I believe the first who will be there when wanted will be the Volunteers. I deprecate the idea of using the Volunteers in fortresses. Battles will have to be fought in the open, and it is there Volunteers will be wanted and not in fortresses. I feel sure that I am speaking a practical truth in saying thus much. Then the third question is whether it is expedient and practicable to have a force of Volunteer mounted infantry, supposing the necessary funds to be forthcoming. In answer to that I say, Yes. I believe that there is no force which would be so useful to us as mounted infantry, and I shall be very glad to see an extension of that force throughout the Volunteer service. My experience of the march from Three Bridges to Brighton, which I took part in under a capital staff Officer, was this. The column was one of the centre columns; we had other columns marching parallel to us—one on our right and another at about three miles off on our left. The Brigadier was naturally desirous of making sure that there was no enemy lurking in the farm-buildings or in the hollows on our flanks to the right or left, and as we advanced he called upon me to send out flanking parties, which I did. But the fact which was patent to everybody was that my column was much delayed by these flanking parties, for they had to cross streams and to get over hedges, &c. It would not have been right to advance the column ahead of the scouts and flanking parties, and I had to check my column while these flanking parties were looking into homesteads and farm-buildings to see that no enemy was there. A portion of the day was thus lost while the scouts were doing this duty. If I had had four or five mounted infantry to whom I could have said, "Gallop to that farm—see if we are safe there; or gallop to the top of that hill and look into the valley beyond, and come and tell me," I should have been able to march forward at my ordinary pace, and should not have been compelled to check the column. What we want is that infantry battalions should have a small force of mounted infantry belonging to them under the same Commanding Officer—under the same Adjutant, drilled to the use of the rifle, and taught to ride sufficiently well as to be able to move rapidly from place to place.

The CHAIRMAN: Will you get a special grant for that?

Sir ROBERT LOYD-LINDSAY: I should be very pleased to get a special grant, but I think we must get an additional grant for the whole force first, and when we have got that. I will go hand-in-hand with anybody to get an additional grant for the mounted infantry. Following the example of Colonel Shakespeare, and saying a word of my own personal experience in the Crimea, where I had much regimental duty, being there from the first day to the last, I would allude particularly to outpost duty in the Crimea. I was on outpost the night before Inkermann, and a very unpleasant night we had, watching through the dark and endeavouring to make out what was happening in the little gullies which led up from Sevastopol. If each outpost had had the assistance of two or three mounted soldiers to act as scouts it is very doubtful whether the Russians would have crept up those passes unobserved. The outposts did their duty in the best way they could, but if we had had a few mounted men with them they would have done their duty much better. I do not know that I need enlarge upon this matter, it is patent to all. There is not a soldier who has ever spoken or written on this subject who has not

urged and pressed for an increase of mounted infantry. Englishmen are particularly suited for the work; it is the way of all others in which the genius and the taste of an Englishman develops itself, a rifle—and a horse or pony, those two combined are all that is wanted. Now one word about the Yeomanry. I have made some remarks about the Yeomanry in a letter which I wrote to the "Times." In days gone by the Yeomanry have done their duty very well, it is a very respectable force. It has one fault, that it takes away from the Volunteers some of the best country gentlemen who give their time to a force which, in my opinion, is much less useful than that of the Volunteers. That is my own opinion, but I wish to speak of the Yeomanry with the greatest respect, for it has done its duty very well in the old days, especially in aiding the civil power, though I think that duty is far better done by Regular Cavalry. The Yeomanry now is the worst trained of the whole auxiliary forces and the worst armed. It is not their fault if they are badly armed, nor entirely their fault if they are badly trained. It has been pressed upon the Yeomanry to train as mounted infantry, and although every endeavour has been exercised to induce them to become mounted infantry they have declined to do so. That being so, it is a question whether it is of use to maintain a force which costs 70,000*l.* a-year, and which sum of money fails to do that which admittedly they have been asked to do, but which they declare themselves unable to do so. Those who have read the evidence given before Committees—I especially allude to the Committee presided over by Colonel Stanley, in 1874—upon the Yeomanry, will see what I allude to. Colonel Oakes stated on that occasion that his proposal was that the Yeomanry should be curtailed by one-half, and that the money which was spent upon the whole should be spent upon one-half, in order that what remained might be made efficient, and not be a plaything which it really was. There is something invidious in speaking of the Yeomanry as I do, but I am of opinion that if the Government cannot afford to maintain the whole of our auxiliaries they ought to make up their mind which force they are going to adopt, and not give a half-hearted support to both, leaving both inefficient. I read only yesterday a very excellent paper delivered by Major Edwards, an Officer of the Yeomanry, and a very enthusiastic and a good one, in which he strongly urged that the Yeomanry should be trained as old dragoons or mounted riflemen.[1] That lecture was delivered in this room; and General Hamley, who was in the chair, in his reply said he was much pleased to find that such a proposal came from within the force, and emanated from a Yeoman, because he thoroughly agreed with it, and he felt that so excellent a Yeoman as Major Edwards advocating this thing gave a good hope and augury that it might be done. Now I want to say one word with regard to the cost and the expenditure of the Volunteer Force, and to urge, if I can, the reasons why an additional grant of 10*s.* per head should be given. I have in my hand a statement of the expenditure of my own regiment during the last three years, and I have no doubt it is typical of many others. I have here on one side of the page the items of expenditure which the Government themselves have authorized, and on the other side the capitation grant, and the other allowances that are given to Volunteers. The first item on the side of receipts, that is to say, the capitation grant that we receive, is for efficients 1*l.* 10*s.* each, making in three years in the case of my own regiment having 1,150 men, 5,242*l.* The next allowance is 2*l.* 10*s.* for proficients, making 664*l.*; for tactics, 10*s.*, making 3*l.* 10*s.*; stationery allowance, 156*l.*; travelling allowance, 20*l.*; regimental camp allowance, 1,372*l.*, making a grand total in three years of 7,049*l.* On the opposite side I come to the expenditure, and these are all items which the War Office say are necessary:—"Headquarters, including orderly room, hire of Corn Exchange," that is very usual in my district where we have not got drill-sheds of our own; "hire of drill ground," usually a field which in these days Volunteers are called upon to pay for, though that was not the case when I first began volunteering, for then we got them for nothing; that cost in three years, 967*l.*; "care and repair of rooms," 420*l.*; "ranges," 1,024*l.*; "cost of conveyance to and from drill, field days, &c., and reviews," 1,080*l.*; "cost of supplies supplied by the War Office on payment," 203*l.*;

[1] See Journal, vol. xxvii, p. 329.

"clothing, accoutrements, exclusive of great coats and valises," 3,591*l.*; "cost of camp, including rations," 1,400*l.*; and then "miscellaneous," 1,000*l.*, for the three years, making altogether, 9,846*l.* That leaves a deficit of 2,797*l.* in the course of the three years. Now this story is the history of a battalion which is made up of ten headquarters, not ten companies, because some of the headquarters have more than one company, but ten centres of Volunteers. Each of these has to maintain a drill-shed, or find a Corn Exchange where they can drill, has to maintain a range, and all these other expenses, and also the expense of going to and from drill. I could go through this showing year by year, but it is very easy to divide these figures by three, and it will show you that there is an excess of expenditure over receipts in each year in this particular regiment of 900*l.*, or if you analyze it still further a deficiency of about 100*l.* per annum in each of the headquarters which I have described. Well now it works in this way, it becomes a matter of great anxiety to us. If once the force goes down it will go down very fast. The danger ahead of us is the Officers, because to get Officers who will undertake all the hard work and the drudgery of this matter is by no means an easy task, and when on the top of all this anxiety you have to tell a man who goes in as successor in your own case that he will have to take over a debt of a considerable sum, the result is, as I know, that many excellent Officers, men who have served in the Army, say, "I am ready to give my time, but I must decline altogether to take upon my shoulders any debt at all." The consequence is we are not getting the best Officers, and we know how vital and important it is that we should have good Officers. Some of my friends have pointed out the fact that when my colleague, Lord Bury, and myself were at the War Office, we did not urge an increase of the capitation grant. That is practically so, we did not ask for an increase of the capitation grant, but what we did ask for was a 2*s.* allowance per day for every man who went into camp up to six days, and that every man should be permitted to go into camp, and should be encouraged to go into camp. That has not been granted. The camp allowance is liberal, but the number of men permitted to go into camp has always been limited. But seven years has elapsed since that time, and if I then urged an increased camp allowance, I now urge an increase of grant. I want to say one word with regard to the great coats. At Brighton only the other day two regiments adjoining my battalion were without great coats or leggings. If the weather had been bad I feel satisfied that lives would have been lost from these men going back to distant counties travelling in the railway soaked in their uniforms. On the occasion of the Queen's Review at Edinburgh, not many years ago, this was the case. I do hope that an earnest move in favour of getting this 10*s.* extra capitation grant will be made; it is a matter of great importance to the Force. You may say that now is not the time to press further demands, but however much that may weigh with some, still we are in critical times, and it is surely of importance for the Volunteers to be able to take the field, and at the present moment they are not accoutred in a manner to be able to do so.

General Lord MARK KERR: I should like to be allowed to say one word, because I am obliged to leave immediately, with regard to Sir R. L. Lindsay's remarks as to the Yeomanry. It seems to me that they are the best force that we can have for the purpose of scouting miles in front and on flanks of your Army in case of invasion. Give them good rifles to dismount and fire, riding rapidly from covert to cover, and so to surprise and harass your enemy. Far better to have the Yeomanry—good horsemen and understanding horses—than mounted infantry improvised for the occasion. Dismounting cavalry, the object being *not* to *manœuvre* on *foot*, but to *ride*, to *fire*, and *report* to *the General*, is far better than *mounted infantry*.

Lieutenant-Colonel MACDONALD, the Queen's City of Edinburgh Rifle Volunteer Brigade: I think we may all congratulate this Institution and the Volunteer Force in general on this paper and discussion, as tending to place the force on the road to escape from the dangers caused by the persistent neglect of others. Sir Edward Hamley deserves the thanks of the whole British public for having taken up this subject with his great experience, and for having brought to bear upon it that experience, giving us the means of having such a discussion as has been taking place in this theatre for the last three days. There is one thing which I have not seen mentioned yet, which I think will go a long way in the direction of

making the Volunteer Force efficient in the sense that if you were at any time suddenly called upon for active duty you would be enabled to get some effective service out of it. There cannot be a doubt that in the force at present there must be a large number of men who might be very useful if put in their proper place, but who, if they were taken out to the hardships of a long march, would, instead of being an advantage to the Force, be a direct hindrance to its efficiency, because, as we have no medical examination whatever of men entering our Force, we cannot test in the least whether after two or three days of real necessary hardship we should not find ourselves so loaded with broken down-men that the efficient and strong part of the force would be seriously hampered by having such a large number of men *hors de combat*. I would suggest that all Volunteers should be carefully examined. I do not mean to say there should be a very crucial or elaborate examination, but an examination for reasonable classification is a necessity. The only objection I have heard stated to that is that if you inform a man that he has got a touch of consumption he is not very likely to be a serviceable Volunteer afterwards. There is no need to inform him of the result of the examination; let it be kept in a locked-up box if you please, so that at any moment the Commanding Officer may be able to turn to it and see that out of a rank and file of, say, 1,000 men, he can turn out 700 who are fit for campaigning duty, 200 or 250 fit for less arduous duty, and the rest men who ought to stay behind altogether. If such a thing were carried out it would have a most important effect, and would place us in the position of being a really tangible force. Then as regards the work to be done by us there are two things. The first is the question of musketry and shooting, and probably the question that is turning up now, and that has the greatest necessity for an immediate answer, is what qualification we are to require from our Volunteers now that they are armed with their new weapon. We should not be too rash in fixing our standard at present. Certainly for the first year, when Volunteers are armed with the new weapon, you could not exact from them all that you intend to exact in future, because it is certain that if you hand a Martini-Henry rifle to a great number of young Volunteers—lads of barely 17 years of age—they cannot possibly shoot well with it in their first year. It is a severe and trying weapon, and many men will not be able to shoot with it until they have been sufficiently battered into condition by it. Then as regards what change is to be made in the qualification, I certainly think, and I think all Officers will agree with me, that every man who joins the force, if he is to earn anything in respect of shooting, must earn it by obtaining a certain qualification: he must get out of the lowest class; but whether the additional capitation grant is to be given to every man who gets out of the class or not is a question of great difficulty. There is no doubt that to encourage mere marksmanship might be a mistake, but I cannot help thinking that too sharp a line is drawn between marksmanship and ordinary shooting. If you encourage men to endeavour to become marksmen you may rely upon it you encourage everybody to get out of the lowest rank in shooting, and there is no doubt whatever that if you stimulate rifle shooting so that the corps gets the reputation of having a very large percentage of marksmen, this will have a marked effect upon the shooting of men who never can hope to attain the marksman badge. Therefore I think an additional allowance for every marksman in a regiment is necessarily a stimulus to the shooting down to the very lowest point. Then the other requirement of work is drill work, which consists of two things, parade drill and action drill. It is certain that no Volunteer regiment consisting of men whose business in life is not drilling, can possibly learn the whole of the contents of "Field Exercises and Evolutions of Infantry" so as to fulfil its contents as they ought to be fulfilled, efficiently and smartly. I think it will be agreed that there are a great number of movements in that book which may have some occult and not easily discovered usefulness if you could learn them properly, but which if you cannot learn them well, can do you no possible good. The suggestion I would make with regard to this is that Volunteers should be called upon to do certain prescribed movements sufficient for the time they have to give, and that the greatest possible exactitude be demanded from them in reference to those movements which are selected. Then as regards the choice of movements I would say select those which the Volunteers themselves discover to be the movements required in a state of war when they go to Aldershot or to the

Autumn Manœuvres. I think everyone who has been at the Autumn Manœuvres will agree with me that so far as the actual movements were concerned, any Officer who wished to have with him the description of the movements he would have to do when he was at the Autumn Manœuvres or at Aldershot might before he started for his duty there, have lightened his pocket by cutting out with a pair of scissors at least two-thirds of the red book. I ask whether it is needful or not when we go to Aldershot to learn what we have to do, or when we go to the Autumn Manœuvres to learn what we have to do, that the first lesson we should learn is that the double columns from the centre, and the retirements from right in rear of the left, and the countermarching, and all those different twists of all sorts, and in every conceivable way, cannot be of the slightest use, for they are never practised for any practical purposes. I know it is said that they have some mysterious usefulness, and I am prepared to grant that, because I know that more expert people than I am, say so. But what I say is this, that no movements can be useful if you have not time to learn them well, and it is the duty of those who take charge of the Volunteers to ascertain how much they can accomplish within the time, and to require, as regards that which can be well done within the time, the most perfect and absolute exactitude. Then as regards manœuvres on a large scale, you have advantages in England which we do not possess in Scotland—why I do not know; probably it is more difficult to find ground, but we have never had, in all the 25 years that I have been in the Volunteer Force, anything like manœuvres on a large scale in Scotland. If by possibility some of us could be taken down occasionally to Aldershot it would be a great help. We could come very easily a good part of the way by sea at comparatively very little expense, and then would be able to see what goes on there, as I personally had the pleasure, through the kindness of the A.A.-General for Auxiliary Forces, of seeing what was going on there, with great benefit to myself. I am sure that such a proceeding would give us a great stimulus. Then with regard to the question of equipment. I suppose we are all agreed that if Her Majesty has not got the money to give us great coats and water-bottles we must just wait; but at all events Her Majesty will take the consequences if we are called upon to march without them. There is another question which to my mind is of the most paramount importance, and that is that supposing a large body of Volunteers in this country has on a week's notice to be moved from one place to another, how are you going to do it? You cannot do it at the present moment, you have no means of doing it. The only way in which you could do it is by the old savage mode of requisitioning all round, a mode which involves the most intolerable hardship upon the peaceable inhabitants of the country, which necessarily causes an enormous loss of time, and the most complete inefficiency of the service. To collect a large number of horses here, there, and everywhere, and a large number of wagons, and to get those detailed off so that the duties of transport shall be done efficiently, would take at least a month or six weeks, and to attempt to do it on a week's notice would only result in this, that the transport would be absolutely inefficient, that your military power would suffer, that the health of your men would suffer, and the discipline of your men would eventually suffer by it. Has any thought been directed to this question? Why should it be impossible to organize? In large towns, for example, there should be no difficulty about it, and even in country villages there should be no difficulty about it. You could have wagons and horses supplied to you upon a moment's notice by making the arrangements with people beforehand. Take my own city of Edinburgh. The police there require wagons; the Water Trusts require wagons; the Gas Company, which is practically a public trust, requires wagons. Why could not some arrangement be made with them to provide that in purchasing new wagons for these purposes military requirements should be in some way considered? There is nothing very particular about the requirements of a military wagon except that it should be ready for rough work; there is nothing required more than strength in the body of the wagon and in the wheels. I would undertake myself, if I could be assured that the Government would give me a small subsidy for doing it, to provide for my own regiment half a dozen wagons for each battalion, that is twelve wagons, and a wagon perfectly suitable for an ammunition wagon for each; and as for water-carts, of course, as we are so good at watering our streets in this

country, there ought to be no difficulty about that. But why not set about it and try the experiment? Give us the chance of trying the experiment. Volunteers may be credited with having gone through a considerable number of difficulties by their own exertions in the past; why not give us the chance of making this experiment and seeing what the result is? I should not require very much money. And lastly, as regards this question of money, it seems to me that money is given now-a-days lavishly for very many things in the way of anticipating the future. As regards education, the Government succeeds in finding enormous sums of money to enable people to build perfect palaces in the way of schools. I highly approve of the children being comfortable in the schools, and I do not object to the schools being even pretty; but how does the Government succeed in getting the money for them if it cannot get the money for making the country safe in the matter of defence? If the Government will give me 3,000*l.* on loan to-morrow, I will undertake to raise the interest to pay them from year to year if they have the meanness to take it. But we cannot originate these things ourselves, we can only suggest them. Will the Government sit down and consider some mode by which they may advance money to us if we are worthy to have it advanced (and if not, then let us be disbanded), for the purpose of placing us in the position of being a reality, and not a sham? I think the great blot in the whole proceedings with regard to the Volunteer Force is that nobody ever seems to sit down deliberately for the purpose of considering how things should be done. If we had laid down before us, or some Committee had laid down before it, some requirements such as have been stated by Sir Edward Hamley, and really a number of practical men sat down calmly to consider how the thing could be worked out, they would have no difficulty whatever in doing it. Let us have some practical consideration of this question: let us not go on merely talking about it. If these meetings which we have had for the last three days do nothing more than inform the few people who read the accounts in the newspapers of what happens in this theatre, that the Volunteers are very anxious to get something done in this matter, I say nothing will result from it at all. What we want is to bring a pressure to bear upon the Government, not to do specific things, but to have specific things considered and worked out and thought out, and to have some practical scheme devised. Surely it cannot be said that with a force which has now existed for 25 years, and which everybody seems to think ought to continue to exist, and which everybody seems to be satisfied exists upon a false basis at present—it cannnot be said for one moment that the practical men in this country cannot devise means for turning it really into a useful force, which it can never be in its present condition.

Major HAMILTON, East Lothian Yeomanry: I do not know whether there is any other Yeomanry Officer present besides myself, but if not, I feel bound to say one word on behalf on the Yeomanry Cavalry in reply to what Sir Robert Lindsay has stated respecting that branch of the auxiliary forces. Sir Robert Lindsay has repeated almost word for word a good deal of a letter which he wrote to the "Times" shortly after the Easter manœuvres. That letter has given rise to much regret and indignation amongst the Yeomanry, some of whom have gone so far as to characterize it as a somewhat ungenerous and uncalled-for reflection on a sister branch of the Service. Sir Robert Lindsay has spoken of the Yeomanry as being an obsolete force, as being the worst-trained and the worst-armed force in the Service. It is not for me to express my opinion as to the training of the Yeomanry, though I am quite prepared to admit that we are badly armed. But whose fault is that? You might just as well say that the Volunteers are perfectly useless because they cannot take the field at a moment's notice owing to the Government having declined to give them great coats. But as to being the worst-trained branch of the Service, I need only refer to the Reports of the Inspectors of Auxiliary Cavalry and of many distinguished cavalry Officers who have from time to time given their opinion on the subject. I cannot now go into the question of figures, but it would be very easy to show that as the Yeomanry only cost the country about 70,000*l.* a-year, for which there is an establishment of 14,000, the actual strength being about 11,000 or 12,000, it costs the country rather less than 5*l.* a-year for each man; and when you consider that for that sum you get not only the services of a man but the services of a horse, I do not think that anybody looking at those figures can say

that it is an expensive force. It would be out of place for me to attempt to discuss the question as to the merits of mounted infantry as against cavalry, but I was very glad to hear a distinguished cavalry Officer give it as his opinion just now that a dismounted cavalry man is at least as good as a mounted infantry man. There is no doubt that the Yeomanry suffer under great disadvantages in not being brought before the public so prominently as the Volunteers. They are very little talked about, and have to work behind the scenes, as it were; but I venture to think, and I am sure those who are in a position to form an opinion will agree with me, that their work is certainly on the whole as well done as that of any other branch of the Service. I may say further that there is no jealousy whatever between the Yeomanry and the Volunteers, and this was shown very plainly by the way in which they worked together when going down to Brighton the other day. They are only too willing to work together, and the more they are brought in contact with each other the better it will be for both. I felt bound to rise to say one word on behalf of the Yeomanry on this occasion, for I feel sure that such remarks as have been made by Sir Robert Lindsay are calculated to do more harm than good; and I am confident that the sentiments he has expressed are not shared by the majority of the Volunteers.

Major-General McKAY: My Lord Wemyss and gentlemen, having been acquainted with the Volunteers since their institution in 1859, both at Hythe and at Wimbledon, having been in command at Carlisle, where I had the opportunity of instructing them personally by blackboard in the Town Hall, and drilling them with the regular troops, and having been recently in command of the regimental district when I had an opportunity of seeing them in detail, I rise to offer a few remarks with regard to their instruction and to the mode of increasing their number. In regard to instruction, I take that branch of it which I hold to be the most important in a Volunteer force, namely, rifle-shooting, but for which I think the Volunteers would not have succeeded, and would not have existed in the numbers they do now. Thanks are due to our noble Chairman for the energy he put forth to create that which is not now merely a national annual meeting, but an imperial annual meeting at Wimbledon, where everybody from everywhere comes to compete in rifle-shooting. It has been hinted that we should limit our rifle-shooting to 300 yards, I think that would be the greatest retrograde movement that ever was made.

The CHAIRMAN: I think I ought to say that in the early days of this movement General McKay was one of the Officers at Hythe (the Deputy-Assistant Adjutant-General of the School of Musketry) under General Hay.

General McKAY: I have always taken an interest in it, and shall to the day of my death. I think much of it in a variety of views. I think, however, there is one error with regard to our Volunteer shooting. I confine myself to Volunteers, as I do not wish to go into the shooting of the Regular Army now; namely, the allowing men to shoot at longer distances until they have qualified or proved themselves capable of shooting at shorter distances. No wonder, as we heard from a Commanding Officer at the last meeting, that people are in fear and dread from the erratic firing. Well may they be. We have heard it recommended that the position and aiming drill should be practised to put the men into form before you take them to the target. This has the true old Hythe ring in it. When a man appears before the target he tries to do his best, but whatever be his faults or errors undetected and uncorrected in the "position and aiming drills," he, as a rule, confirms them by his practice. Those errors should be corrected in your drill-hall or on your parade-ground, and if a person wishes to shoot well and to shoot at the least expense to himself, to his time, and to his corps, let him frequently practise his "position" and "aiming" drill, particularly before going to class firing. I would say further, there ought to be some intellectual instruction given with regard to shooting, and I will illustrate why this should be from a circumstance that came under my own observation in our inspection, which I made a reality. When possible, I always expressed a desire to see some men shoot. On one occasion at ——— there was a man who had shot for the Queen's Prize at Wimbledon in the squad shooting. He shot very well, also a non-commissioned officer with him. There was, however, a young fellow who was not initiated into the mysteries of the shooting

art who was missing the target shot after shot; this young fellow said to his comrade as the wind was blowing briskly across the range, "Are you aiming on the target?" "Oh! yes," was the reply. I went to the man afterwards and said, "Did you aim on the target?" "Yes," he said. "But you did not aim through your back-sight." "No, sir." "Then," I said, "why did you not tell that young man what to do, why did you not instruct him how to aim?" "Oh! sir," he said, "it is part of my game; I go to Wimbledon; and if I was to tell him exactly what to do he would possibly take the wind out of my sails the next time." I told the young man, "Your friend is using not an artificial wind gauge, but an intellectual wind gauge; instead of taking aim through the flanges of his sight, he is putting his fore-sight on the bull's-eye by the flange on the left side of the bar." "Oh! thank you, sir," he said, and tried the plan the next time, and hit the target at 600 yards. The Adjutant, I should say, is responsible that intellectual instruction should be conveyed before the man goes to the target, for I have never found the "Reason why" explained, fail anywhere in battalion instruction, much less in musketry instruction. I adopted the same system when inspecting Volunteer corps as I followed in the training of my battalion, that is to discover deficiencies by conveying instruction, which I found gave confidence to the Officers and men, and interested them in their work. I cannot help repeating that to limit your rifle-shooting to 300 yards would be a retrograde movement, it would bring us into discredit with those wonderful people the Kabyles, who led to the introduction of the rifle into the French army. They were a people who with a smooth-bore barrel 6 feet long picked off the French Officers in Algeria at a distance of 600 yards; if they could do that with a smooth-bore using it intellectually, surely we can do as well, and infinitely better, with the superior rifle with which the Volunteers are about to be armed. Don't go back to the days of bows and arrows. I quite concur in the remarks made by General Sir Edward Hamley that we should be very proficient in shooting up to 300 yards, and I cannot see why if a man shoots well at distances beyond this, that he should be unable to hit his mark at 300 yards. Then I heard it observed, "Do not let them shoot below 100 yards." Well I am one of those old-fashioned instructors who want to give confidence to the recruit in the use of the weapon that is in his hand; you must convince him that that weapon can hit the target, and if he cannot hit it at 100 yards take him to 75, take him to 50 yards, till he can hit it, to show him that the error is in himself and not in his weapon. Our present weapon is far superior to the men as a rule that use it. Why the rifle is the only machine that we have that men have not intelligence enough to grapple with in all its details! How unreasonable it would appear to say to a man driving an engine capable of going 60 miles an hour to go at the rate of only 10 when speed was all-important. The Martini-Henry rifle is capable of shooting accurately at 1,100, 1,200, and 1,300 yards, and is it because you cannot get all that is in it out of it at these long ranges that you are to be satisfied with shooting at distances a fourth of its capabilities? I say, No. Give the man confidence in his weapon; show him that the tool he carries for his defence and offence is capable of doing marvels, and let him be the *marvel maker*. Now I am about to say something which perhaps may not meet with your acceptance. My measure for increasing the number of the Volunteers is a drastic one. I wrote a paper which never came to light for this reason, it did not come before the public, it was suppressed many years ago, and I headed the paper, "Is England worth defending?" That is a question for the public. I say if it is, then let us go about it properly. I do not see why anybody should be exempt from qualifying to give a helping hand in time of need. You know there is a class of the English people which has withdrawn from the Volunteers that existed when the Force came into existence in 1859. I appeal to my lord, the Chairman, to support that statement. Many of those men, and active young men too, go about now with their hands in their pockets doing nothing for themselves or for the country, and I want to see that class brought into a position in which they will be obliged to qualify to defend our hearths and homes. I would have the Regular Army enlisted by voluntary enlistment as at present. I would have the present establishment of the Militia multiplied by about three. I would raise it to half-a-million to be maintained by the ballot and to supply any deficiency in the Regular Army. I would exempt from the ballot all who

would join the Volunteers and were physically and medically fit, and who were in a position to maintain themselves in certain respects, receiving from the Government arms, accoutrements, equipment, including valise, water-bottle, haversack, and great coat, and instruction.[1]

The CHAIRMAN: That is the existing law at this moment.

General McKAY: The Government should provide them with all equipment. It is inconceivable that the Force has not been generally furnished with a great coat so essential to health. Let us hope that the omission will be speedily remedied. I would exempt the man from the ballot who proved his efficiency annually. And this, gentlemen, would prove an admirable element of discipline; for if a man did not choose to attend the drills necessary to make him efficient, or to reach that efficiency necessary to entitle him to be a Volunteer, I would give him his discharge, when he would be available for the ballot, and would not escape the training necessary to qualify him to serve his Queen and country.

Lieutenant THOMAS PHILLIPS, Lieutenant Commanding the Mounted Infantry of the Victoria Rifles: I think, my lord, after Sir Robert Lindsay's speech it is hardly necessary for me to say very much on the subject of Mounted Infantry. The question as to its desirability is evidently considered a somewhat important one or it would not have been mentioned. As far as the speeches have hitherto gone, I think that the cost of the necessary equipment has been exaggerated, and I am speaking from experience. It is put down by one speaker that it would be between 7*l.* and 8*l.* Now the mounted infantry man wants really no equipment beyond his horse, his saddle and bridle, and his rifle. The cost of equipment is somewhat exaggerated, because it is thought that he should have buckets and things of that sort. Now those are totally unnecessary for a mounted infantry man. The mounted infantry has always been an improvised force in any wars we have had; they have simply been infantry men who have got what cattle they could. All that is necessary is for the man to get on a horse and to be able to transport himself from place to place with the greatest possible rapidity. Beyond his horse he wants no equipment excepting of course his rifle and ammunition. Any Commanding Officer, and, I think, it would be worth while for them to give it a trial, would find a few mounted infantry men of very great use. Before condemning them as too expensive, let anybody mount half-a-dozen infantry men in that way. You need nothing for them except to borrow or hire half-a-dozen horses. Before saying "Mounted Infantry! we should like them, but they are too expensive," let Commanding Officers try the experiment; put their mounted men under an intelligent Officer who is an infantry man, not a man with any cavalry proclivities about him; he wants to be a good infantry Officer, and a good horseman, and I am perfectly certain under those conditions Commanding Officers would find it so useful that it would not be a question as to their advisability any longer, but they would wonder how they could have done without them for so long.

The CHAIRMAN: May I ask what the cost of the Victoria Mounted Riflemen is, and how many have you?

Lieutenant PHILLIPS: I should like to mention that we do not have the same men always; we have passed about forty men through the ranks, and we mount any men who can ride, occasionally. We find it too expensive to keep up a large number at one time.

Colonel LOYD-LINDSAY: How many do you get the capitation grant for?

Lieutenant PHILLIPS: We get the capitation grant simply for efficient infantry men, the ordinary 30*s.*, we get no extra capitation grant.[2]

The CHAIRMAN: What do you make the extra cost?

Lieutenant PHILLIPS: It all depends; many of our men have their own horses; you may roughly calculate that the hire of a horse is about 12*s.* 6*d.* a-day.

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[1] Of course the Navy and Naval Reserve would be exempt.

[2] "Mounted Infantry" is not at present recognized by the authorities, and no capitation grant can be drawn for Volunteers as such. When permission was granted to the Victorias to raise a mounted detachment it was stipulated that the mounted drills should not count towards efficiency.

Captain BADHAM (London Irish): My lord and gentlemen, I only desire to make one or two observations, and in doing so I speak not only as an active Volunteer, but also as a member of many years' standing of the finance committee of the regiment to which I have the honour to belong. I quite agree with the remarks which have fallen from Sir Robert Loyd-Lindsay and other speakers as to the present grant being totally insufficient to meet the requirements of the Force. In fact we cannot exist upon it. Our balance-sheet does not, however, show so startling a debit as that described by Sir Robert Loyd-Lindsay, but I should add that we have only one headquarters to keep up instead of ten; and further, that we act with the greatest possible economy in every respect, but even then we cannot make both ends meet, and our men are without great coats and other necessaries. A great hardship connected with the present small grant is, that it is not paid until April, although earned on the previous 31st October. The result of this is that money has to be borrowed and interest paid: but the Government do not allow us any interest for the time they retain it. With regard to the question as to how best to increase the numbers of the Volunteer Force, I think the surest way in which that desirable object could be effected—both as regards Officers and men—would be by making the Force as far as possible *a reality* in every respect. I am not quite sure that in several ways it might not very easily be made much more of a reality than it is now. For instance, when Volunteers are assembled for training and exercise, they are not under the Mutiny Act—unless there are regular troops or Militia also present. We might be assembled in any numbers and have any duties to perform, and yet by ourselves we are not under that Act. If, however, there happens to be a company of Militia with us we are then under its provisions. I do not see any possible argument that can be brought forward in favour of such a distinction; either it is good for us to be under the Mutiny Act always, or not at all. The present rule seems to imply that we are not soldiers, and that we cannot be considered as such, unless we are doing duty with another branch of the Service. I think it would be a good thing for the Volunteer service if the members of it were placed under the Mutiny Act, and that such a step would be very popular in the Force, and would certainly make it more real; any member who thought otherwise would have an opportunity of resigning by giving a fortnight's notice; but I do not think there would be one resignation in the whole Force, and that the applications for commissions would be increased. The Militia have only comparatively recently been placed permanently under the Mutiny Act, and the change was most popular with them. Another thing which I think should be carried out as regards the Volunteers—and which would certainly make them more *a reality*—is that when they are doing duty as soldiers and their whole time is occupied, they ought to receive the pay and allowances of their respective ranks—for instance, when they attend the summer drills at Aldershot for eight days—and also that some little extra allowance should be made to non-commissioned officers who attend regimental camps of instruction, and places of that kind, because under present circumstances this costs them more than they receive, and that is sometimes a heavy strain on those who go, and sometimes prevents efficient men from going.[1]

Lieutenant-Colonel BAYLIS, late 18th Middlesex Rifle Volunteers: We have already alluded in terms of the greatest praise to General Hamley for his article in the "Nineteenth Century" of March last, but when he has come here, now a third time, to give us his presence and to give us his valuable suggestions, and when you, my lord, have come also—you who have displayed the greatest zeal and energy in supporting the Volunteer Force—and when we consider what the Council of this Institution has done in calling us all together in the presence of the Press, and when we have also so many General Officers who have most kindly expressed their opinions, and have given us the benefit of their long experience in these matters, I can only hope that the presence

[1] A Volunteer Officer attached to a Militia regiment during training is now granted pay and allowances of the rank in which he is attached for duty. Why should he not be granted like pay and allowances when serving with his own regiment under similar circumstances?

of the Volunteer Officers to-day will be some satisfaction as showing that your efforts have been responded to, and that the Volunteer Officers at all events are hearty in their appreciation of your kindness. But now, speaking from another point of view, it has struck me how little the Legislature, and how little the Government have done for the Volunteers—and, indeed, it looks as if they were to be "Volunteers" from beginning to end, and were to rely on their own resources entirely. The Legislature consolidated all the Volunteer Acts by "The Volunteer Act, 1863," and I think the only benefits it gave to us were exemption from ballot for the Militia, or finding a substitute, and that field Officers might have one horse without paying the then 15*s.* duty. I think you will find those are the only benefits conferred by the Legislature in that Act—except that when called out for actual service two guineas is to be issued for *necessaries* for each man. Let us see what that Act has enabled us to do. By "The Volunteer Act, 1863," the Volunteers *may* purchase, they may lease, or they may acquire ranges; but it does not say one word about the Government *paying* for them. We may do this and that, but there is not one thing done for us; we are to do it all for ourselves. "The Regulations of the Forces Act, 1871," carried the permission a little further. Section 17 enabled the Volunteers to acquire land, or any easement in land, for storing arms, making drill-sheds, or any other military purpose approved by the Secretary of State as being conducive to their better efficiency. But it did not say that the Government would pay for them: it merely gave the sanction. I only point that out to show how little has been done by the Legislature. We got one step further by the Act of 1871, when we had the honour—and we esteem it a very high honour—to get our commissions direct from Her Majesty. I have alluded to what the Legislature has done—we know what the Government has given us, and it has been alluded to in the article so ably written by Sir Edward Hamley; they have increased lately the capitation grants by 10*s.* to Officers for passing in tactics; but is that sufficient? I think it must be admitted that we are not in a satisfactory state; we are not the strong man armed that keepeth his house. I believe we ought to be as those men described in the Chronicles (1, chap. xii); those men were Volunteers: "They that came to David; they were among the mighty men *helpers of the war*. They were armed with bows, and could use both the right hand and the left in hurling stones and shooting arrows;" they were "men of might, men of war fit for the battle that could handle shield and buckler." That is just what we ought to be. Well, Sir, I say are we fit? We are not fit—and why are we not fit? I say we are not fit, simply because we have not the means to make us fit. We have gladly done all that is required of us—but we want more means. I may mention this with regard to the 18th Middlesex, my late regiment, that happened to be a very large regiment, and so they had more capitation money than many other regiments. They were down at Brighton this last Easter. They were 800 men strong, every man having great coat, valise, haversack, gaiters, and water-bottles—and they even had an ambulance corps and wagon, because they had the means. It only shows that those regiments who have means will use them for necessaries to make themselves really efficient. General Hamley says, "How are we to get more men?" I say this as an old retired Officer, I believe there are thousands of men that have passed through the Service who would come at once back again into the Service if their services be required; and not only that, but a great number would join who have not done so already. We will do all we can for ourselves, but I think the Government ought further to assist us.

Lieutenant-Colonel Helsham Jones, Royal Engineers: The point on which I should like to offer one or two remarks is the second in Sir Edward Hamley's list. My acquaintance with the Volunteers is only quite recent, and has been very short, but it has been most satisfactory in every way. I received great kindness from the Officers serving with me, and so agreeable was my experience that I hope it may be repeated. The point I refer to is the proposal to exercise the Volunteers in the occupation of positions. In 1881 and part of 1882 I happened to be Commanding Engineer at Gravesend. Gravesend is a place of great importance in the scheme for the defence of England. Part of the defences of Gravesend consists of entrenched positions. Those positions have been thoroughly worked out on the ground, and the

plans exist in detail, and it strikes me that here is a place where—pending the adoption of such excellent suggestions as Sir Edward Hamley has made in his paper—the Volunteers might find some very useful practice. I know the ground very well. It is not a closely enclosed country; it is a country on which, after the harvest, you can go without doing much damage. The farmers round about are a most excellent set of men, and would, I am sure, be very glad to see the Volunteers. In connection with these positions there are forts, and in those forts that part of the force which requires practice in garrison work and heavy gun drill would find an excellent opportunity. The second heading seems to cover the question of instruction generally, and I have one or two remarks to make on the Easter operations. It appears to be generally admitted that marching past is a very useful thing if not carried to excess; it enables one corps to compare itself with another, and Sir Edward Hamley has admitted that it has uses. But I do not see why you should give up such a valuable day as Easter Monday to that ceremony; it seems to me, besides, a very extravagant thing to go such a long way to do it. One of the speakers told us that the journey cost about 5*s.* a-head for each Volunteer, so that something like 5,000*l.* has been spent in railway transport. Why not have the march past on some place within easy reach of London, and on some other day than Easter Monday? It seems to me a great extravagance to spend a whole day for the purpose of a march past—that is to say, with the exception of an hour and a half which are devoted to field operations. You might have your march past near London on some Saturday afternoon—say on Epsom Downs. There would be quite time enough to do it all, and you would have a greater crowd than you get at Brighton, which—as far as marching past goes—is all the better. On the other hand, a field day in a crowd is a most extraordinary thing. At Brighton the supports could not see the fighting line, and the main body could not see the supports, the second line of a brigade could not see the first line—in fact, the whole thing was more or less ridiculous. In one case a battalion actually marched under the cover of the crowd round in the rear of another which was quite close by, and opened fire upon it; for the life of me I cannot conceive anything more ridiculous than that. You may say—what would you do instead of marching past? I would venture to say it is a mistake to collect these very large bodies of men; smaller bodies of men could be much more usefully worked. As an example, I take a piece of country which I know pretty well. Supposing one brigade were billeted at Farnham and another were assembled near Woking station, they would have between them about 12 or 13 miles of ground, a great deal of which belongs to the Government, there would be no difficulty about moving over almost any part of it, and the two brigades would be within convenient fighting distance—I do not say that they should fight one against the other every day; but supposing you were to bring these two brigades down on the Friday. Instead of wasting a long time in collecting them from remote distances, you could get a brigade together early on Friday; you would have Friday and Saturday. On Sunday they would halt in camp or billets, and they might finish up by working one brigade against the other on the Monday. Now about the commissariat. I think it would be a very good thing if some of the Officers were employed in arranging for the billeting and provisioning of the men; I mean the Officers of the corps, so as not to depend on the regular Commissariat, because whenever the Force is largely required, the commissariat will be overtaxed; in fact it will be very likely to be all gone abroad, as has been said by one of the speakers with reference to the regular artillery; and therefore you will have to depend on yourselves. And so with the transport; I think some of the Officers might be very usefully employed in organizing transport. I do not know what Sir Edward Hamley means when in his paper he speaks of a register of transport—whether that means a compulsory register like that which exists abroad I do not know, but it seems to me that as you have an association of Volunteers who give their time and go to a great deal of expense in making themselves efficient soldiers, so there is no reason why there should not be a Volunteer transport—owners of carts and wagons, associating to form Volunteer transport. Some of the speakers displayed almost a touching confidence in the resources of the Government; they say when the thing is wanted you will only have to demand and indent upon Woolwich for all kinds of equipment. I don't believe you would get them. I

believe that there would be great difficulty in supplying the wants of the regular Army, and it is quite out of the question to expect that you would find regular transport available for the Volunteers.

Sir R. LOYD-LINDSAY: I am quite sure those who are assembled here are anxious to hear Lord Wemyss wind up the debate, but you will permit to say one word in explanation. I do not wish in any way to speak disrespectfully of the Yeomanry as individuals, but are they satisfied with their arms? As far as I know they are not; I have had many communications recently saying that the Yeomanry cannot compete at Wimbledon for the prize given for mounted corps because they are so ill armed. I think, therefore, I am right in saying that they are ill armed. Are they satisfied with their training? I read what takes place in this room, and I read that the Yeomanry admit that they are not satisfied; they are trained to the use of the sword and not of the rifle: on these two points, therefore, I think they are neither well armed nor well trained. If the Government will train and arm them properly, by all means let us have them. I have every reason and desire to see a force of Yeomanry well trained and armed as riflemen, but the training which they now receive renders any hope of this being done out of the question.

Captain TODD, 3rd Middlesex Artillery: I did not intend to address you here to-day, but after the words that have fallen from a Royal Artillery Officer of great experience—I refer to Colonel Shakespeare (a man who is free from prejudice, which you do not always find in the Service), and who went into the matter to see if we were a workable force, and who states Volunteer field artillery should again be formed at any cost, I should like to say one or two words. Our forefathers fought with the weapons that they had, and they won their battles. We have not been quite so fortunate in dismounting our cavalry and using them as infantry and making mounted infantry take their place. What I want to say is this, that the mounted force of Volunteers are utterly inefficient. Organization is really what we require. How are we going to take part in the national defence if we are to be taken from our horses—to be taken from our field guns and told to act as garrison gunners—told, in fact, by a Royal Artillery Officer in this room—and it has made the atmosphere much lighter to-day to hear a recommendation from an Artillery Officer—told that no Volunteer Officer could ride his horse two consecutive days without giving him a sore back? I believe after all in practice as against theory, for we have ridden from London to Portsmouth in two days, and ridden at staff duty at Portsmouth on the Saturday, in our saddles at five o'clock on the Monday, not dismounting before eight o'clock at night, and ridden same chargers home the next two days without sore backs. With regard to the mounted infantry, on service by all means have as much mounted infantry as you can, but do not abolish the Yeomanry Cavalry, induce them to increase twenty times or more than they now are. The statements that we have heard about the Yeomanry Cavalry are to my mind very like statements made with regard to other things in this room—without positive fact to rely upon, and without having seen the work done. I have seen the Yeomanry work done, and better work I never saw in my life; for I made it my object to attend their training. They knew me well enough when they saw me riding in at the old Deer Park, at Richmond, at six o'clock in the morning (because I was determined to see the whole of their work and judge for myself against *ex parte* statements made to me). Every morning during their training under canvas I went down to their stables at the first drill; I attended the whole of the drills during the day and the last drill at night because, for my part, I believe in the evidence of my own senses as against the evidence given by critics. I have seen a little riding in my time, or I should not be one of the judges at the Annual Royal Military Tournaments which take place at the Agricultural Hall, and I say this: I never saw men better horsed—I never saw horses better looked after, nor equipments kept more cleanly, I never saw better work done—both swordsmanship, on foot, and on horseback, outpost work, and mounting and dismounting, than I saw in the Middlesex Yeomanry, and I put it down to a great extent to the Adjutant—a man who does his duty thoroughly and well—not simply his bare duty, but he evidently enters into the work as a patriot, and does it from his heart. I say, in conclusion, look to the mounted branches at once while there is yet time to train them.

Major PITMAN, Adjutant Glamorgan Artillery Volunteers: I have not had the privilege of hearing all this discussion, but as far as I have read the reports, nothing has been said about the peculiar wants of the artillery branch of the Service. Sir Edward Hamley touched upon some of these in his paper, and you, my lord, by your question in the House of Lords last night, have drawn attention to some of our wants. I think all that has been said about the needs of the infantry branch of the Volunteer service will equally apply to the artillery, but our wants are considerably more. I should like to correct a statement made by Sir Edward Hamley with regard to what the Government provide for Artillery Volunteers. He says that magazines and side-arm sheds are provided. Certainly in reading the regulations, at first sight it does appear that they are provided, but if you read between the lines it is not so, because there are certain restrictions made which prevent their becoming practically available, viz., that the site must be provided by the Volunteers, and a lease of seven years must be obtained before any building can be erected by the Government, and if for a permanent structure, an expenditure of 200*l.* is required and a tenure of twenty-one years before they will incur the expense.[1] Now, it is practically impossible to obtain such a tenure in these days when land on the coast is likely to be required for docks or other purposes, so that really we do not get any help from the Government for these very essential requirements. In these critical times, when we have to consider our national defence, I think our first consideration must be to provide an adequate supply of garrison artillery, and especially so because in the event of war, it is absolutely certain that the Government will be entirely denuded of the regular garrison artillery and, in a great measure, possibly of Artillery Militia, so that the training of our Artillery Volunteers is of extreme importance. We should therefore be trained in manning the guns that we should have to fight in case of actual war, and for that purpose we ought to have frequent opportunities of manning heavy guns in fortifications. At present the heaviest guns issued to Volunteers are 64-pounders. I must admit that occasional opportunities are given us, but I think we ought to have more frequent opportunities of manning the fortifications. Certain guns of position are provided, but to a very limited extent, and the Government ought to give us means of moving these guns from place to place. In the corps of which I am Adjutant we have only four 40-pounders for 17 batteries at eight stations, and we have at our expense to move the guns from station to station to meet the wants of all, which is a considerable tax on our small resources. I think we ought to be supplied with means for moving these guns to and from the various practice ranges on the coast, and to have batteries erected by Government with magazines and storehouses. It is impossible for a gunner to learn his duties without practice. We have of course to go to a considerable expense in laying out targets. The Government gives us material for targets, but allows us nothing for the expense of laying them out. We have, indeed, been requested to bring them in after each practice—a costly operation which we cannot afford to carry out. Again, we have to convey our men and ammunition to the various practice ranges, and this is another very considerable source of expense. As regards our magazines we have to build them or hire them where we can get them, sometimes at a very considerable distance from the range.[1] There is another very urgent matter, and that is that we should be supplied with models and drawings such as are found at every artillery station. An efficient artilleryman should not only have a knowledge of actual drill, but he should also have a knowledge of the theory of gunnery and a technical knowledge of the use of the different *matériel*. It is impossible to acquire an intelligent knowledge of artillery *matériel* and gunnery without having such drawings and models. For the artillery branch, therefore, we require not only what our brethren of the infantry want for

[1] Another additional burden that Artillery Volunteers have to bear is the charge of a large quantity of stores, for which store-rooms have to be provided, fires kept, and labour employed to keep them in order; and whenever any of these stores are lost—which is sometimes unavoidable, no margin is allowed, but the full cost price of the missing stores is charged against the corps, however old, worn, or obsolete they may have been.

the provision of an adequate equipment, but we also require Government to help us in providing for the special requirements I have enumerated which are essential for the proper training of Volunteer gunners.

Colonel TERENCE O'BRIEN, late 20th Regiment: During the Indian Mutiny the late Sir Hope Grant, in command of the Oude Division, on one occasion wished to turn the flank of the enemy. As the infantry could not keep up with the cavalry he took the spare ammunition wagons of the field batteries, and he mounted on those wagons a Company of Royal Engineers. That gave me the idea of a cheap method of carted infantry *v.* mounted infantry, which I think would be useful to the Volunteers. I find by the drill-book that a company of mounted infantry should consist of 5 Officers with 5 horses, 121 non-commissioned officers, and men and horses—altogether 126 men and 126 horses, of which 94 would be combatants as 32 would be required to hold the horses. I am not going to resuscitate that very old and vexed question of the pole *v.* the shaft, the off-horse and the near-horse, but I may say that the old Bengal Horse Artillery would go anywhere and do anything, and the horses were all mounted. I think, therefore, that by replacing the dead weight of the gun by the live weight of the men, who in difficult places could jump off and assist the carts, you could make 6 carts with 12 men in them, and 6 men on 6 horses do the same work as your mounted infantry company, for this arrangement would give you 108 men, plus 5 Officers, with but 41 horses. You would then only want 18 drivers to hold the horses, thus furnishing 95 combatants for 41 horses—an immense saving. I think this system, therefore, might advantageously be tried for the Volunteers. I consider that those Volunteers who should be marksmen, and could be saved riding drill, might easily learn hasty field fortification, that is the destruction of roads, bridges, and so forth. Moreover, the carts might be very useful for bringing up more men to assist when wanted, and they could be always kept out of fire. I think, therefore, it would be a cheaper and better means of transport to be employed for the Volunteers when required to do infantry duty as advanced skirmishers. Again, we have in England most admirable material lying waste in the shape of hunting men. I find from "Whitaker" that there are 165 packs of hounds in the United Kingdom, and if only ten men volunteered belonging to each hunt that would be 1,650 men who would be most admirable adjuncts to the cavalry in getting information, and would be most useful to staff Officers and others. If therefore the Volunteer cavalry corps are to be augmented they might be so with advantage in this direction by the formation of a corps of guides throughout the country.

Major SHENSTONE, late Worcester Yeomanry: As one who has raised and commanded Volunteers and Light Horse and Yeomanry, I was going to enter the lists with Sir Robert Lindsay on behalf of the Yeomanry, but at this late hour of the meeting I must ask you to excuse me.

Colonel MUSSENDEN: Like my friend, the last speaker, I may say it is getting late. My only object in sending in my card was this—an Officer of Yeomanry having got up and made a very plucky defence of the Yeomanry against some strictures which have recently appeared in the public prints, I wished as Inspecting Officer of one of the two Yeomanry districts to endorse the observations that he made. I am perfectly well aware that this is a meeting intended to discuss Volunteer questions, and I think it is better perhaps for me not to say anything further on the subject of the Yeomanry.

The CHAIRMAN: I believe it is the duty of the Chairman to sum up, and to express, as far as he has been able to gather it, what the views are of those gentlemen who have spoken on an occasion such as this. Now, I think, there is one thing we all agreed upon, that is the value of General Hamley's paper, and the great debt that we Volunteers owe to him for that paper, because he has stamped the Force as a valuable and efficient one with the great authority of his name, and he has given us those suggestions which have been so freely discussed. And I may say that I think the value of the paper has been greatly enhanced by this discussion, and that the discussion and the paper together ought to put our rulers, and those who govern us, and those who are responsible for the efficiency of this as of all other forces, in a condition to make it efficient if they choose to read

and to open their eyes to the real, true wants of the Force. I only hope that they will read this article, and that they will, some of them, perhaps, my Lord Morley, or whoever takes special charge of the Volunteers, cast their eye over the discussion which has taken place. Now the great value of Sir Edward Hamley's paper was that he focussed what has been floating about, which you find in speeches, in letters, and in various ways expressed by the Volunteers themselves during the many years they have been in existence, as to what their wants are, and he has added to that many excellent suggestions of his own, especially as regards the necessity of thorough organization, of having store sheds and drill places, and of laying down, as he has done on that map, a line of defence which he thinks is one which ought to be taken up, and which he has shown you could be occupied, and how the Volunteers who would occupy it should be trained to do so. All these things are very valuable, and, I think, the discussion has been very useful, but what we ought to try and get out of it is something that is practical, so far practical that we may be able to find out what there is a general agreement upon. No doubt we have had a great many diverse suggestions. A great variety of suggestions have been made, but, I think, you will say that a sort of tone has run throughout, so that, I think, we can gather what is the general agreement regarding these matters. For myself, I should say my own view is that I agree with everything in Sir Edward Hamley's paper, with one exception, and that is the question of the 300 yards' range. I think that everything he asked ought to be done. I know Sir Robert Loyd-Lindsay, having held an official position, is, perhaps, a little alarmed at financial figures, and it may, perhaps, be that 800,000*l.* is a heavy demand. But that sum is that at which General Hamley puts the whole cost of making the country absolutely secure, which, I think, it would be if this Force were thoroughly organized. Without asking so much as that, let us see what comes out of this discussion. We have here again with us to-day our excellent friend General Erskine, and I should like to repeat what I said the other day, which is that the Force was fortunate in the extreme when it first started in having two such men at its head as Inspector and Assistant Inspector as General McMurdo and General Erskine. They were thorough, true soldiers; they knew what soldiering was in the field, and they came to this work without any prejudice against us civilians who wanted to become soldiers, to fill a want in this country and to learn to do our duty. I can speak from experience that there was a total absence of red-tapeism in all their acts; they did everything to encourage us, and there was nothing of the martinet or drawing too tight a line, not that, I think, he will say that we were not in those days very well disciplined and orderly in all things. General Erskine told us what he thought were our needs, and he classified them. I should also be inclined to classify them as he did. He says our first want is personal equipment. There is no question about that. What are we now? We are nothing but "men with muskets," as has been said, and muskets not of the very best pattern in many cases. I believe we are going to get muskets of the most recent pattern, but it is only very recently. when our old muskets are nearly shot out and are a little better than gas-pipes, that we are likely to get a better rifle. We are practically nothing but men with muskets; we are utterly unfit to take or to keep the field for a single day. We are wanting in all the necessaries of personal equipment; we are wanting in great coats, we are wanting in valises, we are wanting in leggings, we are wanting in haversacks, and we are wanting in water-bottles. Those are the first necessaries if we are to be of any use. How are we to get them? The next thing General Erskine put was the "reserve," that we ought to have an additional reserve. I agree with that too. But as regards this question of personal equipment, we ought to look as regards it and all these other matters to what we can do for ourselves, and to what the Government must do for us. If we are to be efficient at all, unquestionably this first question of personal equipment comes under the head of Government assistance, for anyone who heard that bankrupt financial statement of Sir Robert Lindsay's must see that out of the present capitation grant we cannot do it. And when we hear about great coats being found by Government when the occasion arises, and water-bottles, and that sort of thing, of course the simple way is to make the corps responsible that they are thoroughly equipped and ready to take the field, and to give them money to do

it, and that the money should be given simply for every man who appears on the day of parade thoroughly equipped. I am glad that my gallant friend goes in so strongly for the 10*s.*, and for many other things, including the better arming of the Yeomanry, but when he comes here I cannot forget that he was for five years in the War Office, and it is really a most extraordinary thing how men's eyes when once they are in opposition are opened to things that they did not see before.

Sir ROBERT LINDSAY: I will ask my noble friend whether he has read the report made by Lord Bury?

The CHAIRMAN: Oh yes! and there was no suggestion of 10*s.*

Sir ROBERT LINDSAY: There was a suggestion that 2*s.* per head per day for six days for every man in the Volunteer Force in camp should be given.

The CHAIRMAN: That has been done.

Sir ROBERT LINDSAY: No. The number of men permitted to go into camp has each year been limited. This year the number was limited at first, but later in the season the limit was taken off when it came to be discovered that the estimate would bear it.

The CHAIRMAN: I speak in the presence of the Inspector-General of the Auxiliary Forces, and, I think, I may say that every Commanding Officer who this last year has applied for leave to go into camp has had permission to do so, and has had that grant recommended by Lord Bury's Committee.

Sir ROBERT LINDSAY: The recommendation was that every man should go into camp, and should have 2*s.* per head per day for his services.

The CHAIRMAN: Granted; but you were not going to compel them to go into camp. It is those who are willing to go, and every one who has gone has got that grant. My gallant friend lays great stress upon this 2*s.*, but that was when he was in office; now that he is out of office he goes in for 10*s.*, and I am delighted to hear him do so, and I hope he will make a motion in the House of Commons on the first opportunity urging that, and carry practically through this grant of 10*s.*, to make us personally equipped and ready for the duties which are before us, and which we manifestly are not at present. As regards personal equipment, I think I may say we are all agreed. We cannot do it without more money, and the best way of getting it is payment by results, that every man who at inspection appears thoroughly equipped shall have the sum of 7*s.* or 10*s.*, or whatever it may be which is to be paid in addition to the present capitation grant. Now as regards reserve, that is a thing we can do for ourselves. I quite agree that there ought to be a reserve. I have always looked upon the Volunteer Force as simply cadres of what it would be if the real danger came. Eight years ago I moved for a Return of the men who had gone through the force, and my impression is that that Return should be something like 600,000 or 700,000 then. It is now a larger number, and a great number of those men are as efficient as possible, and I am perfectly certain that if there were the least wish expressed by the Government they would come flocking back in thousands, and would form a reserve. And I think that it will be a very good thing, whether the Government eventually do this or not, that we should at once do it for ourselves, and for every regiment of Volunteers to have a reserve establishment, and those men who are on the reserve should appear at the inspection parade, to show that they are there entities in flesh and blood. I think I may say then you are agreed that there shall be a reserve, and that there are therefore two things on which we have an absolute and perfect agreement. And, I think, there is a third thing which no doubt you are agreed upon, namely, that whatever is done should be done quickly and at once. These are the first things upon which we are agreed; we consider them necessary, and there is a general consensus of opinion upon them. There are other things for which we must look to the Government. There is this question of cavalry which has caused a little excitement this afternoon amongst the Yeomanry. Now I differ, *in toto*, from my friend Sir Robert Lindsay. I look upon it that we cannot get up cavalry, but that the Yeomanry is the natural cavalry of the Volunteer Force. I agree with him as regards their training. He says that they want this and that, but these things rest with the Secretary of State. If the Secretary of State thinks that the training of the Yeomanry is not what it ought to be, then let it be altered. He may think that they ought not to be mounted rifles. Well,

cavalry do not like the name of "mounted rifles," "rifle cavalry" is what they ought to be called; and it makes all the difference whether you call them "mounted rifles" or "rifle cavalry." "Rifle cavalry" simply means that instead of having that obsolete arm which my gallant friend during the time he was in office spent 45,000*l.* a-year in manufacturing—I mean the carbine which shoots at 1,000 yards—they should carry the Martini-Henry rifle as Colonel Bower's horse did, and shoot up to 2,000 yards. I should very much like those cavalry gentlemen who say that the proper firearm for the cavalry soldier is a carbine, to be told this: "You are going out into the field to fight a duel with another cavalry regiment armed with the rifle; you have your choice of the carbine or the long rifle; which will you take?" They must in common sense take the weapon which will be effective at 2,000 yards instead of one which is effective only at 1,000 yards. Therefore I hold that what you want is to make the Yeomanry the Rifle Cavalry of the Volunteer Force; give them the long rifle instead of the carbine; loosen their trowsers: do not make them bad travesties of a bad model, for I am sure that sometimes when we have seen our cavalry men walking about the streets it has seemed as if their breeches must split whenever they mount or dismount. We do not want our Yeomanry to be cased up in that way; let them shake a reef out of their trowsers; and give them a long rifle, and, if they object to it, say this—I am imagining that I am the Secretary of State—the Secretary of State says to the Yeomanry: "Now, look here, I think you would be much more useful if you were trained and armed in such and such a way. We are quite ready not only to move your vote that you now have but to add to it;" because I believe in these bad times if you want to keep up the Yeomanry you will have to do something more for them.

Sir ROBERT LOYD-LINDSAY: They have 7*s.* per head additional this year.

The CHAIRMAN: That is all right. I wish the landlords had it too. You say to them: "If you will be trained in that way we will move your vote, but if you will not we will not move the vote for any regiment that will not accept those conditions." I am further inclined to think, instead of having the Yeomanry organized only by regiments, it will be a very good thing to have Yeomanry with detached troops or detached half troops in different parts of the country, as the Volunteers originally were. Of course if we can add mounted infantry to our different regiments so much the better, as the Victorias have done. It is worth trying, and it is an excellent addition to the regiment. But now as regards artillery. I am so glad that Colonel Shakespeare came and spoke out as he did, because that has been a hobby with me, and I think the military authorities made a great mistake in suppressing Volunteer field artillery. If you had regular artillery enough for all your wants well and good, but the proportion of guns that you have—according to the standard of what that proportion ought to be—is not sufficient for your Army, and when the Army and Reserves are called out, it certainly is not sufficient for the Army and Reserves; and then the Militia and Volunteers are left absolutely out in the cold without guns; they are all wanted for the regular Army, and we should be gunless—with the exception of those that already are in the hands of the Volunteers. Well, I have been for years trying, as far as practicable, to urge on certain authorities who talked these matters over, that Colonel Darby's system of big guns drawn by agricultural horses should be extended all round the coast counties, and it was with a view of ascertaining whether those guns existed or not that I gave notice of the question last night, and I got the usual answer—which is none at all. The answer is, "It is indiscreet," and so on. As regards that matter of indiscretion it may perhaps be not wise to publish our weakness, but do not suppose it is not known. Every Military Attaché in this country knows every detail of every gun of every sort: it is only we who do not know it; and if we did know it, we should find it in many cases so unsatisfactory, and there would be such a row that we should make ourselves extremely unpleasant to those in authority. I hope that guns of proper quality will be put into the hands of Volunteers who are willing to man them, and that the Government will say the time has come when it will not do to leave 200,000 or 300,000 men—or as it will no doubt be at that time 500,000 men—without a gun. Colonel Shakespeare was perfectly satisfied with them. This shows that it can be done. He also proved not only that in Canada it can be done,

but that it could be done in this country, because I saw his battery drawn by hired horses at Wimbledon. I said, "Take those guns across that boggy ravine which runs at the bottom of Glen Albyn," which is known to many Officers present, and he took them across. One wheel was on the path and the other was in the ditch. There is a great boggy ditch there; the horses sank in it. He said, "Flog the leaders;" and the whole battery went through and up the steep bank on the other side. I will engage that our own Royal Artillery in the Autumn Manœuvres which took place at Cannock Chase in that year could not have gone through a worse place. They were not perhaps as smart in all respects as would please the Royal Artillery eye, and they were suppressed; but one of the best things that any Secretary of State could do would be to revive them, whatever the Inspector-General of the Royal Artillery may say to the contrary. Now as regards the question of transport. I have always held—and I have given evidence to that effect—that you do not expect the Government to supply transport for you as they do for the Army. But what Government ought to do, is what Queen Elizabeth did in her time—at the time of the expected invasion by the Spanish Armada. In those days every cart in the kingdom was known and registered—so many horses, so much harness, so many shoes, and so many nails, and everything necessary allotted to every company. All you now want is that the Government should do this. They can do it, and they ought to do it. It should be systematically done and effectively, and rightly done. No doubt to a certain extent we might do it ourselves if the Government do not, but it will give the brigade Colonels something to do in their different brigade districts—they would have only to find out how many regiments there are of Volunteers, what different kinds of wagons and carts are wanted, to find out in the district what carts there are, and allot them, having them all registered, so that at a moment's notice every man knows where to lay his hand on them. I agree with Colonel Macdonald, that if the Government do not do their duty as regards this, which is a simple absolute essential, then I believe we should do it for ourselves. But, after all, that is a very happy-go-lucky way, and not the right way in which a thing should be done: it should be done by the Government, and it is one of the things they should first do. There are the other wants about drill-sheds and drill-halls. Let us get the other things first, and get these afterwards. No doubt the question of ranges is a very important matter. Here in the Metropolis, corps have enormous difficulties with regard to their ranges. There is a difficulty about Wormwood Scrubs. I think my friend Sir Edward Hamley ought to delight in Wormwood Scrubs: it is a place after his own desire, for 300 yards is the limit of shooting there. This brings me to the shooting. It is perhaps a rash thing to differ with Sir Edward Hamley, but I cannot help feeling this—when we come to this question of shooting—that we are speaking in the year 1885, and not in the year 1815, and that you have got a weapon now with regard to which to limit it for the mass of your troops to 300 yards would be a very retrograde step. I have no doubt that Sir Edward Hamley does not mean what we think he does. I think it is very likely that what he means is this—that it is essential that men should be able to shoot at a short range, and that they should be thoroughly trained at that short range, and then should go on to shoot at longer ranges. In that we all agree. Some enthusiastic Volunteer said he would begin at 50 yards: I quite agree with him; but then comes the question—Sir Robert Lindsay talked about a rumour, and I have heard a rumour also that the Government may possibly do something about this shooting, and probably the way to do that would be to go back to the old system. Originally we got 20*s.* for the man who did not shoot, and 30*s.* for the man who did. That is a sound principle. You have made shooting absolutely essential to any degree of efficiency, and there is no man that gets any grant at all who does not shoot at any rate in the third class. If he shoots out of the third class into the second class something more should be given for the regiment, and if he shoots out of the second class into the first there should be something more; and if he becomes a marksman then something more. As regards ranges, I hope the Government will try and help the corps to get ranges where they are wanted, but there is no doubt that the invention of the Morris tube is a very great assistance in this matter. I maintain that if a man is thoroughly trained with a Morris tube up to long distances—say 1,000 yards—he will be able to go out and

shoot just as well at a target, of course allowing for the wind. You might perhaps introduce the action of the wind when shooting with a Morris tube by means of a pair of bellows. Barring that, you can in any gallery or in any passage with the Morris tube learn to be perfectly practised shots, and it would be well, I think, if every regiment of Volunteers had these tubes for the purposes of practice. I may say that I have received several letters from Colonel Hale, amongst others upon this very point. Another question is camping. The more camping we have the better. Men learn as much in a week's camping as in a year's drill elsewhere, and the more camps we have with regular troops the better. As regards that question of the Mutiny Act, I object entirely to it. I feel that our discipline, as it is, is extremely good. I think Commanding Officers have ample power, by putting a man under arrest during the time of drill, to keep him under arrest during the whole time of camp, and at its close you can turn him out neck and crop. That is what we want. We want to turn out men who are undisciplined and not a credit to the Force. Where you have the Volunteers brigaded with the Militia and the regular Army, which have the Mutiny Act, I grant that you cannot have two forces serving together under different laws, but I should resist any proposal, except under circumstances now existing, to put the Volunteers under the Mutiny Act. I really think I have pretty nearly gone through the main points, except this about the garrisons—about which I do not think there would be the slightest difficulty. That brings me to this: I have assumed in any remarks I have ventured to make, that the constitution of the Force remains as it is. There is one thing which I will not say we have suffered from—but there has been a danger of our falling into that error which Talleyrand said was above all things to be avoided, namely, "*trop de zèle*." By that I mean not zeal for the Service, but the zeal for making the Force something different to what it is—improving it, as has been said, "off the face of the earth." There was a long article in the "Standard" the other day wishing a new Act to be brought in, and a London Scot wrote to me begging me that I would immortalize myself by bringing in a Bill to give effect to the "Standard" article. Now that letter in the "Standard" was written by a gentleman who really knew nothing whatever of the subject, because the effect of his recommendations would be to improve us off the face of the earth. I remember the observation of one of the wisest Ministers we ever had—Lord Melbourne—who said with reference to a matter of this sort: "D—— it! why can't you leave it alone?" That applies to very many things, and especially to the Volunteer Forces. I hope that our over-zealous friends will not induce the Government to make changes either as regards ranges, discipline, or giving us more drills than we have, because if they do so, there will be very great risk of losing the Force altogether. As regards garrisoning, it might be desirable to have a list in every regiment of the men whose time would allow them to go into garrison, or to be able to say that they could go in for a certain time voluntarily, and if they would do that voluntarily when there is no fear of invasion, there is no doubt they could do it when it was necessary to free the regular troops; and so they would accomplish what the "Standard" newspaper wishes to have done compulsorily by Act of Parliament. I think there is a good deal to be done in that way. I think it was Colonel Knollys who suggested it, and some other gentlemen. I do not know that there is anything else that I need touch upon. I shall simply conclude by saying—perhaps it is a presumptuous thing for an old Volunteer to say, but I find one never loses by speaking the truth—that I believe this Volunteer Force is a Force capable of enormous development when the occasion arises: I believe it to be a Force of which in its present state, as far as the members are concerned, and what the Volunteers themselves have done, a nation may well be proud. One can only hope that General Hamley's article and this discussion may open the eyes of our rulers to what is necessary to make this Force thoroughly efficient, and if it is not fit at present to take the field, I hope the Government will do their duty by it, and in doing their duty by this Force do their duty to the country for whose sake this Force exists. But I say this to the Volunteers: We have stuck to it through sunshine and through shade for twenty-six years. The Government know what we feel and what we want, and what we ought to have. Well, I pray that they may have the discretion and the foresight to give it to us, and give it speedily. But, whether they do or not, I say to the Volunteers, "Stick

to it still!" I forgot to mention that Officers of the Volunteer Force are eligible to become members without ballot of this excellent Institution, and I hope, seeing the good that has come of this discussion and the instruction to be gained in this hall, that every Volunteer Officer who possibly can will join its ranks.

Sir EDWARD HAMLEY: My lord and gentlemen, I have noted with infinite satisfaction how very far the views I ventured to put forward about the Volunteers have received the support and concurrence of this audience. There have been some few points of difference, how could it be otherwise? But they were chiefly matters of detail, and as I have your support in the main I will not detain you by exciting dissent or controversy on those points when our object is to be unanimous about the main scheme. Any pains I have bestowed in placing my views on record and presenting them to you have been amply compensated by seeing the interest you have been so kind as to show in them, and in listening to this discussion. I hope that the impulse, the strong impulse, which the subject has received here may not cease, but may be continued elsewhere until the end we all have in view may be accomplished, namely, to see this kingdom put into a condition of defence. Never in the whole course of our history, never since the days when an English force was composed of archers and men-at-arms, have we had more need than now to look to our weapons and our armour. For when we look round us what do we see? We are about to endeavour to extricate ourselves from one war, a war hitherto barren of result; we may be about to enter upon another, the end of which no man can foresee, and when we look abroad for countenance and support, when we look to the nations among whom we have been accustomed to find friendly faces, we see little except hatred and malice. Well I am not going to utter any Quixotic sentiments about England being ready to defy the whole world, England is not in a position to defy the whole world, she has never allowed herself to be put in a position to do so. But there is one thing we may do, and we must do, and that is to employ our great resources for restoring the national strength until we shall resume our place in the councils of Europe, and until any of the Great Powers shall once more be eager to court our alliance. This is not, perhaps, an easy task, but it is in our power; we must largely increase our fleet; we must see to the protection of our stations all over the world; we must cement the alliance with those loyal and faithful friends, the Colonies; we must render our fortifications defensible; and we must provide ourselves with an abundance of the best artillery that modern science can supply; but besides and beyond all this, we must take steps for rendering ourselves ready to meet any invasion. It was with a view to this result that I ventured to put my opinions before you. I am most grateful to you for the favour with which you have received them, and the support you have given them, and I thank the noble Chairman for the eulogium he has been pleased to pass upon me. This brings me to another point, a request I am going to make with which I am sure you will be most happy to comply. We all know the share that Lord Wemyss has taken in the establishment of the Volunteer Force; we all know that for six and twenty years he has been a most earnest and enthusiastic Volunteer, so that he may be called a representative Volunteer, ready, not only as a practical Officer but as a member of Parliament, to do all in his power to promote the best interests of the Force. Therefore I am confident you will join with me in thanking him for his presence in the chair on the present occasion. I cannot doubt that in coming here he has added greatly to whatever weight and influence the subject may have derived from this discussion.

The CHAIRMAN: I have only two words—to thank Sir Edward Hamley for the kind way in which he has referred to my position here during the most interesting discussion. I felt it a very high honour when I was invited to take the chair, and I felt certain, having read Sir Edward Hamley's paper, that much good would come from that paper being discussed as fully as it has been. That is why I proposed on the first day an adjournment; the interest went on increasing, and, I think, we have had something like forty Officers and gentlemen who have taken part in this discussion. And the great merit of the discussion is this, that it has not been confined to Volunteers; we have had our old Inspector, we have had our old Musketry Instructor, and several distinguished Officers of the Army, besides also a distinguished Officer of the Navy. I think, therefore, you will agree with me that this discussion

has been a most useful one, and you will heartily endorse what I am now going to propose, which is a vote of thanks to Sir Edward Hamley for his kindness in coming here and reading this paper. If we succeed, and if Sir Robert Lindsay succeeds in carrying in the House of Commons that motion which he is going to make, I hope next week, for 10*s.* additional grant——

Sir ROBERT LOYD-LINDSAY: Lord Wemyss ought to be aware that in the House of Commons you cannot make a motion for an increase of any vote. You can move to diminish a vote, but you cannot move an increased vote.

The CHAIRMAN: There might be a resolution without specifying the sum, "That it is desirable that further encouragement should be given to the Volunteer Force." At any rate we shall not forget, if we get this money, how much we owe to Sir Edward Hamley.

Friday, May 8, 1885.

REAR-ADMIRAL W. ARTHUR, C.B., Member of Council, in the Chair.

ON LIQUID FUEL FOR MARINE PURPOSES.

By Vice-Admiral J. H. SELWYN.

IT will be within the recollection of the elder members of this Institution, that in the year 1865 I first drew their attention to the subject of liquid fuel as likely to prove of enormous value, not only to our Navy, but also to the commercial marine of this country. In the year 1877, I again read a paper giving the results in evaporation of pounds of water per pound of fuel obtained during a long series of experiments made by me with the sanction of the Admiralty at Woolwich Dockyard, during 1869–70. These results, showing an evaporation double that of coal as ordinarily used, were sufficiently encouraging to have justified further trial at sea, but I grieve to say, that the vote for experimental purposes having been seriously diminished about that time, this was given as a reason for declining to carry the investigation to a conclusion which could not have failed to result in savings such as to justify all the expenditure that might have been incurred. To my great regret, the only outcome of my exertions was, that other nations took up the subject, and now, on the Caspian, and probably in the Euxine and the Baltic, the Russian flags floats over several hundred vessels which employ no other fuel. I would venture to ask the naval members of this Institution whether they have seriously considered the danger of having to meet even torpedo-boats which carry twice as much fuel, are fit for twice as many hours active service as our own. What about a sea rover, which can use her highest speed for twice as long as the cruizer that seeks to catch her, without being therefore compelled to resort to a fuel station? What, again, about the establishment and defence of such stations if only half the number are required that we should now think necessary? If, again, there are present any of those great shipowners or representatives of those great shipowning companies, if any of the engineers, whose advice such persons depend upon, let me ask each and all of them whether they can afford to ignore the increased cargo space and other economies, which liquid fuel, if it could do no more than halve the present expenditure of coal, would certainly give them. There may again be some present who desire to protect the vested interests of our coal owners or coal merchants, or our coal miners. If so, I would say to them, coal can no longer be used for ocean steamers at high speeds, such as are imperatively called for, so as to pay dividends; answer, if you like,

"Perish dividends, as others have said perish India," but know that if these perish you will not long survive. By these you have your living, and the nation or the company that cannot make and return profits, not less than the individual merchant, has but a short lease of existence. I therefore entreat you to give me your close attention while I attempt to put before you, more strongly than ever before, the great importance of a more concentrated fuel for marine purposes, than that with which we now load our ships, to the exclusion of more perfect defence—or more paying cargoes, and incidentally, the even greater importance of a scientific comprehension of the chemical problem involved in the perfect combustion of such fuel. I have been I must confess of late much more surprised than instructed, by long descriptions of results obtained in Russia and elsewhere, which have neither the merit of novelty nor of utility. The wonderful apparatus which produced an evaporation of 12 lbs. of water per lb. of fuel in ships and on locomotives in 1883–84 was surely not so useful as that which at Woolwich and elsewhere in 1869 produced an evaporation varying from 16 lbs. to 19 lbs. with cold feed. The novelty of blowing in the oil with steam may indeed have been great to those who had but just emerged from the use of step grates, where the oil dropped, as from one tread of a stair to the other, but scarcely so to those who had found out in 1865 how to blow it in with steam. But enough of these pretenders to a consideration which the volumes of your Journal show to be the just meed of others who long preceded them. Messrs. Wise, Field, and Aydon's patent still remains the most instructive initiation of the right paths to be followed by those who seek to burn the liquid hydrocarbons, and the recent death of Mr. Aydon makes it more than ever right that his claims should be acknowledged now and by me. There is no doubt whatever, that in 1869 absolutely perfect combustion of the oil was produced, constantly, and without any difficulty, on a large scale and for months together. No oil was ever used by me, or, I believe, by any of those who experimented with it at that time, of a less sp. gr. than 1,050, that is, fifty-thousandths more than water. The oil I used last year in my renewed experiments was of sp. gr. 1,060. That I am now using has a still higher sp. gr., so that it is entirely wrong to assert that in England light and not heavy oils were used, and that in Russia the latter have been first employed. Indeed, the case is just the reverse, according to the writings of these very persons. For while the sp. gr. of the oil they employ, crude oil from Baku, and "astatki" or refuse from the distillation there, never rises to a sp. gr. of 1,000, we never have used in England, and do not now use, anything that is so low as 1,000 sp. gr. Now for marine purposes, it is most important that this difference should be borne in mind; a less sp. gr. than salt water means that the oil would not run out of the ship freely if it were required to get rid of it, a less sp. gr. than water means an easier, nay even a dangerous, inflammability, and also less carbon in the compound hydrocarbon. Ethylene which is only produced in the laboratory at present, having a composition C_2H_4, gives 27 lbs. of water vaporizable by its perfect combustion; acetylene,

C_2H_2, also a laboratory product at present, gives 22 lbs. of water vaporizable. These two gaseous bodies will, I believe, prove to be of the utmost interest to us in the future, both being producible under certain conditions in the furnace from the hydrogen and carbon present, but I am not yet fully prepared to go into this part of the subject, although I know enough to enable me to state with confidence that we shall much more than double the evaporative duty of coal with liquid fuel in the near future. Facts in evaporation are not to be met by chemists with denials, but must be accounted for by theories, new perhaps to some imperfectly informed chemists, but already and long since affirmed by their superiors in that particular branch of chemical science.

With this preface I now remind my hearers that so long ago as 1868, I saw—and stated publicly that I saw—at Victoria Park, in a common Cornish boiler, 1,098 lbs. of oil do the work previously done by 6,720 lbs. of coal per day. All last year I was trying experiments under another Cornish boiler, which gave results surprisingly confirmatory of this, and which proved, at any rate, that the calorific value of the oil, whatever that may be, can be largely exceeded, if the steam used to blow it in be properly treated. Metallurgists of great eminence have found the same effect, and have been able to melt—are constantly melting—platinum like lead in these furnaces. Now the melting point of platinum is 3,080° Fahr., and the heat of burning hydrogen is the only means of producing such an effect; the decomposition of steam is known to result where metals are present, and in this case the hydrogen of the steam is the cause of success which could not be attained with carbon and oxygen alone. At the same establishment silver bars of 2,000 ounces, which used to take 120 minutes to melt, are run down in $\frac{1}{6}$ of the time. My illustrations, now proceeding, will form the subject of a future paper, but the time is not a favourable one for public instruction on a subject so likely to lead to valuable results in steam navigation, so certain to be adopted immediately they become known by foreigners, and so sure to be tardily accepted, or to have worthless substitutes pushed forward among ourselves. I say this—more in sorrow than in anger—is the conviction forced on me by a lifetime of experience. Within my own recollection, in this very Institution, valuable, almost essential, economies and improvements, in various matters connected with the two Services, have been brought forward, discussed, and approved—but not until the method of trial and error had been exhausted, not until uncounted millions had been spent in doing the thing the wrong way, not until the life of the man of genius had been well nigh spent, and his heart well nigh broken, nay, in some instances, not till after his decease, was his invention absorbed into the official mind, for fear some small reward, at least of recognition, might be claimed by or for him. This is not the way for a nation to prosper. 'Men of genius, men of invention, are the prophets of material progress sent among us by Divine Providence, and that nation which refuses to recognize them will as surely sink as did those who refused the ministrations of the ancient prophets of moral progress. There is also arising

among us a disregard of proprietary rights of all kinds, particularly of property in invention, which cannot be too strongly condemned.

There were once current in England such proverbs as *Suum cuique*—His own for every man. *Fiat justitia ruat cœlum*—Let justice be done though the heavens fall. *Palmam qui meruit ferat*—Let him who deserves it have the reward. But these are ignored now, and instead we have *Beati possidentes* and other such fallacies propounded. Excuse the digression which has no personal object, but is a simple statement of facts affecting others who have worked as hard as myself, and have perhaps secured some benefits, but not what they were justly entitled to claim. Need I name Scott, or Moncrieff, or Longridge, or Perkins? Need I show how the nation would have gained, if effete fortifications, half-armoured ships, weak guns, and dangerous boilers, had been avoided by just investigation?

But my present object is to *enforce* a greater economy of fuel, and this fortunately can be effected without any of that large expenditure which is so often a concomitant of radical changes. To burn liquid fuel instead of coal requires no change in engines or boilers, and only such an adaptation of the furnaces as can be readily carried out in each ship by her own artificers and engineers; at the same time, it removes the necessity for a whole army of stokers and coal trimmers. It enables a ship to receive her fuel with the greatest facility at sea or in harbour, while proceeding under steam or even sail, is without the nuisance of dust or ashes, and it is not liable either to spontaneous combustion or to deterioration by time, heat, or moisture. If the ship gets on shore, it can be run out to lighten her, or be pumped out into lighters with a speed and facility unapproachable with coal; and, lastly, if, as I believe, 46 lbs. of water can be evaporated with 1 lb. of fuel, full steaming for *twenty-four* days can be carried on where now we are limited to *four*. What increased value shall be given to a navy composed as is ours, vital to our national existence, as is ours, if each ship can remain effective six times as long as she now does? I entirely refuse to listen to the casuistry, for it is nothing more nor less, which when attacked on this subject puts forward a plea that at slow speed long voyages can be performed. I also, justly I believe, refuse to listen to the persons who will not take the pains to study the subject, or the assertions made by those who have done so, and take refuge in a stolid unbelief of facts, or worse—a denial that such things are possible because their limited comprehension does not enable them to understand the *modus operandi*. Such persons do not deserve, and therefore will not receive, any attention from me, while for earnest students who are anxious for instruction there are no pains which it will not be grateful to me to undertake—no time that I have at my disposal which I will not gladly give. There is, however, in this, as in other similar things, no royal road to knowledge. Whoever wishes to learn must come and work with me, or if they are in existence, with others who have worked at the subject as hard as I have and for as long a time. I have not the slightest doubt that there are now in England to be found persons who will answer me by saying that they are using liquid fuel and know all about it, just as there are

in Russia. I challenge any one of them to prove that he ever got in a marine boiler as great an evaporative duty as was obtained by me at Woolwich, under Government inspection, in 1869, and if by close copying of my work, then, there should be such a person, I challenge him to a further trial in which he shall be bound to equal what I now obtain, and give the chemical reason why he is able to do it.

I will now deal with the old objection, which otherwise some one would be sure to bring forward, as deserving of consideration, which he would assume I had neglected to give—the supply and price of the oil. I should, of course, in vain ask him if he knew how much shale there was in England, and what it contained of volatile hydrocarbons per ton. Still less should I expect an answer as to the possibility of making this oil from valueless substances; but he might at least give me credit for having paid for the many tons I have burnt in experiment, and having taken care that the price should not be prohibitive. In small quantities I pay 64*s.* per ton; in large quantities I could probably get it for less, but it can be manufactured at not more than 30*s.* per ton in any quantity required, and with a very good margin of profit by those who know how. But let us take it at 64*s.*, and see how it then compares with coal at—let us say—15*s.* per ton. Say that a given steamer burns 300 tons of coal per day for a given speed, and for the moment let us assume that one-sixth of this quantity of oil is required to do the same work. We will leave out the minor economies of stokers, their wages and provisions, shovels and firing tools, fire-bars, and coal sacks, &c., and take 300 tons at 15*s.* or 225*l.*, and 60 tons at 64*s.* or 192*l.*, a difference in ten days of 33*0l.* But now comes in quite another and a much more important item. The voyage may be taken as requiring ten days' fuel, which is 3,000 tons, or in the case of the oil fuel 600 tons. Here is a difference of 2,400 tons of cargo; say, as freights are low, at 10*s.* per ton, 1,200*l.* more in favour of the oil. I am quite ready to admit that where no cargo is carried, as in men-of-war, no such saving can be credited to the account; but no one has yet been able to show what the cost to the nation might be of an inefficient fleet, or squadron, or single man-of-war at the wrong moment. "Liverpool attacked by foreign squadron" comes over the wires, and behold either no squadron available to England till to-morrow, because they are just come in and are coaling, or having coaled they can only get to Liverpool at full speed from their station by using every pound of fuel they have on board, and consequently coming in sight of the enemy in an inefficient state. Whether the difference is, or is not, six times in this latter case, it is not necessary for us to decide. It may be only twice, but it will even then be important to double our "consumable store." In men-of-war, as at present constructed, it would also be a great benefit if we could carry the weight of fuel lower down and in smaller spaces without inconvenience, and it is clear that this can be done with a liquid to an extent entirely unattainable with a solid fuel. In any future war England must either again destroy her enemies' goods—wherever found at sea, under whatever flag—or submit to lose her own com-

merce, and with it the power of feeding her population. There is no alternative, and therefore no choice. To carry this out no condition is more important than increased fuel, and better economies of that fuel. Beyond the supplies of oil already referred to, I may mention coke ovens and blast furnaces where by modern processes, while securing the main result desired in a more perfect manner than heretofore, waste products are largely economized, and among other valuable products the oil we are speaking of finds a place. Each ton of coal used in a blast furnace can be made to produce from 20 to 22 gallons of oil. Every coke oven on the Jamieson or the Simon-Carves process can produce, at the same time that it makes much better coke, a very large quantity of heavy oil. I should never have ventured to propose the use for the British naval and commercial marine of any fuel of which there was not an ample supply within our own coasts; but I feel confident that there is more than we could consume if the expenditure equalled that of coal—an expenditure which has reached the enormous total (for steam navigation alone) of 4,695,000 tons per annum. I have good hopes that these figures may be reduced to 782,500 tons of oil, plus the hydrogen of the steam necessary to blow in the oil. It has been said that it was not possible to get more heat out of that hydrogen than was given to raise the steam, but not only is this belief directly opposed to the facts I and others have observed, not only is it contradicted by the recorded observations of Bunsen and Fyfe, but it happens that we know perfectly well that the temperature of dissociation is between three and four hundred degrees Fahrenheit, while the temperature of the hydrogen flame is about 3,776° Fahr. I am sorry that I cannot now give you all the confirmatory observation on these important facts, but as I have already said, at a more favourable time I shall hope to be allowed to do so. Some of my recent experiments have been made with a view to ascertain whether it might be possible to light up a boiler with a coal fire in one of the furnaces (it being necessary to have about ten pounds of steam to blow in the oil at starting) without sacrificing the calorific value of the oil, by the changed form of furnace under the fire-bars, which then became necessary. But in this I have not succeeded as yet, and I still deem it indispensable to get steam at first starting from a small auxiliary boiler if the highest efficiency of oil furnace is to be the first consideration, as I have no doubt that it should be. The losses of heat up the funnel, which are specially large when forced draught is used, and even in ordinary cases amount to nearly one-fifth the total duty of the coal, taking that at 10 lbs. of water vaporizable, can be almost entirely banished, and the heating surfaces can be kept in a perfectly clean and efficient condition. As to the attention required, it is reduced to a minimum, and I hear that on the Caspian, burning the oil by no means economically, the steamship engineer lights his own fires and never looks at them again till the end of his two days' voyage, having no stoker on board. Yet the making or not making of smoke is so entirely under command that two torpedo-boats, who were at such a distance as to be unable to see each other, might yet

signal out a Morse code in longs and shorts by their smoke in the air.

I think you will agree with me that it is inconceivable how a nation like Great Britain can have allowed this subject to remain dormant till another Power took it up, and till steamship companies ceased to pay dividends, mainly on account of the enormous fuel consumption requisite for high speeds. Are we all asleep? and does it take a Caucasian to awaken us? It would indeed be a rude awakening if a whole blockading squadron were sent to the bottom some dark night, because they had made a miscalculation as to the amount of fuel carried by the enemy's torpedo-boats, and therefore the distance they could come off and the time in which they could do it. Many details which have been given in my former papers are of course omitted here, as they are of easy reference in the Journals of this Institution and of that of the "Naval Architects," but if any naval Officer takes a special interest in the question, I shall be happy to give him, privately, further information on the chemical theory and practice, and I should also be able to allow any marine engineers to come and measure the evaporation obtained, under my personal supervision. More it would be improper for me to do at present; but I hope the time will soon come when a regular school of instruction will be established for the due appreciation of the use of liquid fuel.

In conclusion, and in order to leave a definite impression of my object and its consequences, let me state a case shortly.

The annual vote for the Navy is about eighteen millions. Of this it may be a fair supposition that one-third, or six millions, is devoted to the ships and their crews. Now if each ship is made twice as efficient, that is to say, can remain on her station twice as long as before by reason of a change in her fuel which gives her that power, this may be considered as affecting the value of the whole fleet to the extent of twelve millions per annum. Instead of the paltry savings effected by an unwise parsimony, we have here an instance of economy and efficiency combined, giving most magnificent results. And this is but one specimen of what might be effected in every department of the State if red tape and apathy were banished, and intelligent unbiassed appreciation were given to each invention as it came forward. If existing departments are overburdened, it would pay to create a new one, which must, however, have no politics, and be under a special, intelligent, life-appointed chief, with a good staff, and no interference with its duties or appointments. The duties of this department should be to examine and report upon all which might be brought to it in the way of inventions affecting the departments of the Army and Navy, and as the results of such an organization became apparent, extending its action to all meritorious inventions of value to the nation's trade and commerce. The departments should be able to recommend grants of money where the necessity of the inventor made this the only possible course, but generally their recommendation would be sufficiently encouraging to attract capital, and thus render such aid unnecessary, particularly if a strict and efficient protection to the property created by invention were made

one of the first objects of the Law of Patents. If this is another digression, I hope you will pardon it. I have shown what economies will result; can any one quarrel with me if I have shortly referred to that which seems to me a feasible means of obtaining them in the future more largely and with less loss of time?

Captain CURTIS, R.N.: I do not profess to be a scientific man or a chemist, but I have taken a considerable interest in different modes of combustion of coal. I have had the pleasure of seeing this boiler at work. In our present boilers there is not the slightest doubt that the efficient heat is due to the superficial area of the furnace and boiler exposed to the combustion within.[1] Admiral Selwyn's boiler gives heat all round the surface of the furnace and tubes. The combustion may be made perfect or imperfect, that is to say, give off carbonic acid or carbonic oxide. It is nothing more nor less than concentrated fuel. We know very well if there is too little water brought to bear upon a fire the fire is fed and burns with more force, combustion being a combination of carburetted hydrogen and oxygen gases; or if you take a candle and blow it out it is blown out with too much oxygen; an excess of hydrogen or oxygen gas destroys the combustion, it is perfect or imperfect in relation to these mixtures; but here Admiral Selwyn regulates the hydrogen and oxygen and the carbon as perfectly as possible. I am quite sure the first nation or merchant that uses it will be far ahead of anybody else in utilization of fuel. I cannot for the life of me conceive that any Government, hearing that Admiral Selwyn says he can evaporate 36 lbs. of water with 1 lb. of fuel, should neglect to test the efficiency of the patent. We have plenty of old vessels on which the experiments might be tried. Why not make one of the new torpedo-boats on this plan? They are voting away 11,000,000*l.* of money; with an expenditure of 3,000*l.* or 4,000*l.* you might make the test. I quite appreciate what Admiral Selwyn says with respect to inventors and so forth. You have only to read "Blackwood" for this month. I knew Mr. Bashley Britten; he said he was the inventor of the shallow-groove rifle, and also of the gas-check. The Americans used both long before we used them—as far back as the Confederate War. Now we use them others have the credit. Mr. Britten got little or nothing for his inventions. From what attention I have paid to the combustion of fuel, my suggestion was a down draught, and that the air should be supplied above and go down below the fuel. I am quite convinced in the future that coal will be no longer the fuel of steam-ships, its place will be taken by rock or shale oil. Any company that utilizes this liquid fuel will be far ahead of anybody else; will make larger profits than those that use coal.

Mr. E. H. HENWOOD: I should like to say that I fitted my steam-launch with liquid fuel two years ago, and it has given very excellent results. I am now fitting a steamer with it which will, I am sure, satisfactorily prove that Admiral Selwyn's patent is one of the first in the field for saving fuel. The results of steaming under that process were most satisfactory; there were no fires to clean, and there was no such drawback as with coal fires, as the burning away of the fire-bars, choking the tubes, ashes to throw overboard, &c.

Captain CURTIS: I might say that you can signal with smoke just as well as you can telegraph; and in this apparatus you can put out puffs of smoke at will.

Mr. H. W. C. TWEDDLE: I have listened with a great deal of attention to Admiral Selwyn's paper. For the past twenty-five years I have been burning petroleum oil, and am now burning it every day for various purposes. As fuel for naval purposes,

[1] In ordinary furnaces, or, in fact, in any furnace, it appears impossible to get so complete combustion with coal as Admiral Selwyn does with oil fuel. With coal you cannot utilize to the full extent the gases, and coal being a non-conductor of heat you damp the fires every time you heap coals on the fire. You cannot utilize the furnace all round. The ashes in ashpit are a non-conductor. When you apply the forced draught I am given to understand you blast quantities of raw coal through the tubes up the smoke-stack overboard. With oil fuel the flame impinges on all parts of furnace and flue, and you use up all the gases.

on the Caspian Sea I suppose to-day there are probably from fifty to sixty vessels burning the residue of Baku petroleum called "astatki." On the Volga there are probably as many more steamers using it. These vessels have a greater speed in proportion to their boiler power than any other vessels, because you do not require so large boilers to get speed with this fuel as with coal. The value of this fuel for heating is about twice that of coal. Admiral Selwyn gets much higher results than we obtained. On the Black Sea we use it to some extent, and in the Eastern Caucasus we have and do use it to a large extent. In America we have used it since 1860 or 1861. I have burned since then probably 100,000 tons. We had no other way in fact to get rid of our waste[1] products of manufacture in early days. I remember in 1862 or 1863 we fitted out a small war vessel to try petroleum fuel, and where formerly she would only go about 4 miles an hour with coal we made her go nearly 6 miles with liquid fuel. The great objection brought against liquid fuel in the Russian Navy was that it was too dangerous, but by putting it in the lower part of the vessel where you have the water ballast tanks there is no danger whatever. You require for a ship (I do not care whether it has 200 h.p. or 10,000 h.p.) but one fireman and three or four boys on each watch. On the Caspian Sea vessels they usually have one fireman and two boys on a watch. You can go into the engine-rooms when the thermometer is 103° in the shade, and you do not feel it much hotter down in the engine-room than it is on deck. You can imagine the value of that fuel in the tropics, where (when *burning coal*) if you go down into the engine-room it is 130° or 140°, and the men have to come up every few minutes to gasp for breath. You can get liquid fuel nearly all over the world. My business during the greater part of the past twenty-five years has been to search for petroleum deposits, and develop them on a large scale. In Great Britain, in your Colonies, in the Red Sea, in the Persian Gulf, and in India you have enormous deposits of it, but you must be able to (drill[2]) or bore for it as we have done in Pennsylvania to develop them. I acquiesce in everything that Admiral Selwyn says in regard to its value for naval purposes, and when other nations use it and you have not utilized it, you will find it out and discover your error, perhaps too late. I can only say that in America, and, in fact, in all other countries, Governments are very slow to take up this question, and I suppose your Government is about as Conservative as others.

Mr. W. T. RICKARD: May I ask the effect of this oil on boilers, whether it has any chemical action on the coats of the boiler, the outside of the boiler?

Mr. TWEDDLE: We have about fifty boilers burning this fuel, and they have been burning it more or less for six or seven years past. When you protect the interior plates of the boiler furnace against the direct impingement of the flame you have no trouble, if you do not do that, the tubes get loose. We have had no difficulty in this respect. There is no chemical action on the boiler-plates whatever, and the flues keep perfectly clean. There is no smoke coming from the chimney when the flame is properly regulated, except when you have to open the furnace doors to clean the burners. And now we have got rid of that difficulty. We have the furnaces arranged with double sets of burners, one on each side of the door. When we desire to clean the one in use we simply swing it back out of the furnace and swing the other into its place, with only a momentary cessation of flame.

The CHAIRMAN: Perhaps Mr. Tweddle will inform us if there is any vessel he has known that is capable of containing this liquid without giving off unpleasant smells. The principal objection I have heard is, that iron, being porous, will not retain it.

Mr. TWEDDLE: There is to-day about forty millions of barrels of petroleum stored in tanks in the United States. These tanks are all built of iron, from 60 feet to 109 feet in diameter, and from 20 to 30 feet deep, each containing from 10,000 to 40,000 barrels of petroleum. The leakage is very very slight. Well constructed iron tanks are perfectly tight and perfectly dry on the outside. This crude petroleum is usually from 40° to 46° Baum's hydrometer, and is very thin and volatile.

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[1] These waste products were benzene and residuums of distillation.

[2] Drill is the American term for boring.

In the Caucasus we also have iron tanks constructed the same as in America, and we have no trouble from leakage. Baku oil has a heavier specific gravity than American oil.

Mr. E. HENWOOD: I had very much pleasure in witnessing Admiral Selwyn's experiment some few weeks ago. The heat was superb—it was a white heat; there was little or no smoke escaping from the chimney, and it is, in my opinion, one of the greatest inventions. I have had my attention directed to these matters for some years, and I have never seen anything at all approximating to the results that have been obtained by Admiral Selwyn.

Mr. TWEDDLE: A vessel taking in, say, 1,500 tons of coal, usually requires, say, five or eight hours, but if you require to put in 1,000 or 1,500 tons of oil, you can run or pump it in in about three hours. On the Caspian they load a vessel of 800 or 1,000 tons in from three to four hours. Discharging the cargo is done by pumps. It is done so quickly that they have to be careful that they do not strain the vessel by taking it out of the tanks unequally.

The CHAIRMAN: Perhaps Mr. Tweddle will favour us with some information as to how the oil is burned and the description of the boilers.

Mr. TWEDDLE: It is simply two tubes, one for steam and the other for oil. The steam blows the oil, atomizes it you may say, into the furnace, where it is ignited. The amount of air admitted being regulated.

The CHAIRMAN: Could you give us any proportions of the pipes.

Mr. TWEDDLE: The pipes are usually about 1 inch to 1½ inch in diameter. One for oil, the other for the steam.

The CHAIRMAN: Do you have two pipes, one above the other?

Mr. TWEDDLE: There are probably twenty different varieties of burners—there may be a hundred. It is usually just like an injector, putting the oil and steam in a thin sheet, into the furnace. The best systems are those which atomize the oil the most, and regulate the admission of the air necessary for combustion properly.[1]

Admiral SCOTT: I am very glad that Admiral Selwyn has brought the development of liquid fuel forward at the present time, because it will supply a great want, and therefore has undoubtedly a very great future. What has been said of conservatism is perfectly true, for all Governments are slow to take up inventions. Improvements have to be pushed, and unless they are continuously urged forward, often at a great sacrifice of money, they cannot be brought to a successful issue. Hence the actual inventor, just as happened in the case of Snider, makes no progress, but some large company is subsequently formed which gets the profit that ought to have gone to the actual inventor. The short time that is required to take the liquid fuel on board has been already referred to, but it has not yet been mentioned that the use of this fuel does away with the coal dust which usually gets upon the engines, injures their bearings, and causes an immense deal of extra work. The wear and tear and damage from coal dust is now considerable, and in passenger vessels it is also highly inconvenient. The fact that a less quantity of oil is required to be carried as compared with coal is another great advantage, and the oil is likewise much more easy of application as fuel. There is also the enormous advantage of doing away with stokers, who in passing through the tropics suffer very considerably, as must have been noticed by one who has crossed the Line and been through them. In burning liquid fuel, on the contrary, very little heat escapes, for there is no necessity to open the furnace doors to throw in a fresh shovel full of coal. This is really the trying thing on board steamers, for if you want to steam fast the stokers have to be constantly shovelling coal into the furnaces, which is very severe work, especially within the tropics. The objections made to liquid fuel are, I think, groundless. At the present time, when very few of our passenger vessels are paying, and the companies are mostly hard

[1] The liquid fuel "astatki," usually used in Russia for fuel, has had from 30 to 40 per cent. of its more volatile products distilled off. For naval use liquid fuel ought to have *all its volatile elements* distilled off, so that it has a very high flashing point. It is a very simple thing to do. I should say from 400° to 500° Fahr. might be easily obtained. Then the oil would be almost inodorous and perfectly safe in every respect.

pressed, see the enormous advantage that would at once be obtained by doing away with the stokers, and at the same time requiring only one-fifth the weight of liquid fuel to carry the vessel the same distance as coal. It now takes forty days' steaming (including stoppages) to get to New Zealand. On a long voyage like this, great loss of time is occasioned by having to stop for coal, and the steamer often arrives at inconvenient hours; but the adoption of the liquid fuel would enable the vessel to steam the whole distance without difficulty. And more than this, we should not have to depend upon any Power's friendliness, for the vessel could run the whole distance to our Colonies and back without being dependent on any coaling station. To England, with her great maritime power, this question of fuel is infinitely more important than to any other country, and I think that postponing the trial of oil in our steamers occasions a national loss. If this fuel were to be adopted, companies would be at once enabled to run their vessels at a considerable less cost, and where no dividends are paid at the present time the reverse would be the case, and thus the severe strain which the country is now suffering from bad trade would be materially lessened. By burning this fuel, and thus cheapening carriage, intercourse with all countries would be facilitated. We want a closer intercourse especially with our Colonies; we talk about it, but we do not take many steps towards it, but this fuel would enable Britain to have a much fuller intercourse throughout her Empire, for the mail and all ocean services would be carried on far more cheaply, and the adoption of the oil in the place of coal would be of the greatest advantage to our ocean steamship companies,[1] as well as a great comfort both to the Officers and crews of the ships and to the passengers they carry.

Admiral SELWYN: I think Captain Curtis has not quite understood the chemical arrangement by which the hydrogen and oxygen of the steam are dissociated in the furnace. The gases of which I have spoken are produced in the furnace, and they add the total evaporative duty of burning hydrogen transformed into ethylene and acetylene to the duty obtainable from oil, and that is the only way in which the effect can be secured. I am not so sanguine as to suppose that I can get more out of a cat than her skin will hold, and I never did suppose ever since 1865, I should say ever since the late Macquorn Rankine's paper here on the subject of combustion of fuel, I never did suppose I could get more than the theoretic calorific value of the carbon and hydrogen contained in the oil. That may occasionally amount to 27 lbs. of water vaporizable, but is rarely so high, the general thing is between 17 and 20, and it is only by the addition of the hydrogen of the steam, a subject which has engaged for many years the close attention of inventors, the burning of the hydrogen of water, but it is only possible under certain accurately observed chemical conditions, and when you get it you get a great success. Mr. Henwood's observations are gratifying to me, insomuch that they proceed from a naval architect who is trying the thing on his own responsibility, and therefore, I presume, has a good opinion of it. Mr. Tweddle has spoken in a most valuable manner of the facts in connection with liquid fuel both in Russia and in America. But I beg to draw his attention to the great central fact that you cannot propose to persons on board a ship to burn anything that can, under any circumstances of temperature such as is experienced in the tropics, give off gas. If we ever do it no one can tell for a single instant how long it may be before the explosive proportions of gas and air may be reached in the hold of the ship, and you may have another such explosion as that which sank one of our men-of-war, and was attributed to a preparation called, I think, xerotine siccative. With regard to the quantities of oil obtainable in England, when there is an unlimited amount of material in England, far superior to the total quantity of coal, which gives you 42 per cent. of volatile matter, we shall be very bad chemists indeed if we cannot get all the oil we want without resorting to a foreign country. It would not be safe to rely on such a source for fuel, especially for marine purposes, even though we should have exhausted our coal, as some pessimists think will be the case. It is doubly necessary that we should seek fresh sources of fuel when the Duke of Argyll and other men of science are all pointing to the probable exhaustion of our coal. Of course Mr. Tweddle, or any American, can speak very comfortably on this subject, because if

[1] It would be equally valuable to our naval service.—R. A. E. S.

you took the coal of Great Britain and put it down as one square of a chess board, and you gave all the other squares for the coal in the United States, we should be about right. We are certainly getting to be a used-up country in the way of coal. As for the chemical action on the boiler, I am at a loss to conceive how anybody can suppose that from carbonic acid, which is a pure product of combustion, there can be any chemical action on a boiler. Carbonic acid could, if it did its very utmost, only give out carbon very slowly to iron, if it were disposed to take it up, but I have not seen in a boiler any other disposition than to take up carbon in the shape of soot. That we do not get with oil; we get a perfectly clean surface on our heating apparatus, which marine engineers will appreciate at its just value. Admiral Arthur spoke about the permeability of iron. This oil will go through wood very quickly, but not if it is coated over with a little paste or glue. It is a very curious fact that these oils while they dissolve almost every known substance—they make India rubber into jelly in a very short time—they utterly ignore red lead—they respect paste or glue with the most absolute pertinacity. Neither paste nor glue are permeable by this oil. As for iron, I think somebody must have observed that, who had never seen an oil tank at all, because all our stores have been for the last twenty years, to my certain knowledge, kept in iron tanks, and nobody yet has complained of their leaking, except from the rivets, and a little paste or glue puts that right. The oil has a marvellous property of protecting iron; it entirely keeps it from rust, or anything of the kind. It is one of the best lubricants we have. As to the different burners, Russia, as I have stated in my paper, began by following some very early inventors in England in 1865. I am not absolutely certain at this moment who it was that did it, but one of our early inventors made a step grate, in which, instead of fire-bars he had steps, slightly inclined, so that the oil fell from one step to the other. About 1877 the Russians were using this step grate, and thought it was a grand thing. They have now got forward to using a burner which, I believe, Mr. Urquhart and some others have patented—an injector, with a rose put in front of it. What would happen if you were to put a watering-pot rose in front of a well-devised injector, that is to say, a thing intended to produce a strong current of air by means of the steam, and to comminute the oil by means of that vapour; what would happen if you put a rose in front of that would be that you would spoil the injector as perfectly as it could possibly be done. The result is shown in a very much lower evaporation, whereas, in the injector as used by me in 1869 at Woolwich, we never failed to get the full calorific value of the oil, even when we did not burn the hydrogen of the steam. With this apparatus of theirs they congratulate themselves on evaporating 12 lbs. of water per lb. of oil. I must refuse to consider that as any progress. In regard to the main question of its value to our Navy, Admiral Scott has spoken so strongly, just what we should have expected from him in the way of appreciation of a great fact, that I only regret that he is not likely to come back here to discuss it more often, and as pleasantly as we have always done. I have submitted to several men of business the saving which I have stated as possible to be derived from the utilization of this oil, and they say that is a fair way of stating it, that if you have a squadron of ships each divided off to her separate station, and those ships can be kept twice as long on their station by any internal arrangement, you practically double the value of that ship. If of a ship then of a fleet—if of the ships and men of the fleet then I may fairly claim credit for a great economy. I have put it very low, I have said it was only double, for an economy which is not a parsimony of 6 out of 12 millions a year. When the naval expenditure is 18 millions I think that is surely worth considering by any economical Government.

The CHAIRMAN: Gentlemen, we must thank Admiral Selwyn for this very interesting lecture which he has given us on this subject. I only hope that it will be taken up by others and fully discussed. Now, as we are on the subject of hydrocarbons, I may as well mention that this form of combustion which Admiral Selwyn proposes is not the only one by which we can obtain motive power, in fact, the use of liquid fuel of a more highly inflammable nature is the only way in which successful submarine navigation has been carried on. In the Fenian torpedo-boat, built at New York, and which was frequently running about the harbour, very highly inflammable hydrocarbons were used very much in the same way as gas

with the gas-engine, that is to say, by a series of explosions, and under these circumstances the machinery could be contained in an air-tight compartment, which no one need necessarily enter. As no oxygen was required for combustion for submarine navigation, this had many advantages, but of course, for general purposes it would be much too dangerous a form of fuel to adopt. I asked Mr. Tweddle a question as to the form of tank in which mineral oil would be carried on board ship in order to elicit the fact, that with these low mineral oils, which Admiral Selwyn proposes to use, there is no danger and no difficulty in storing them on board ship. We know wherever it is carried on sea voyages, there are always certain fumes escaping, which has raised a great objection to it on the part of seamen. There are other forms in which mineral oil is used as a steaming fuel, and it has been the dream of many that steam-ships should actually cross the Atlantic burning the water on which they float. We know that hydrogen can be economically extracted from water, and the mineral oil for admixture therewith could be carried as cargo; but, as Admiral Selwyn pointed out, there is only one proportion in which the combination can take place, and the mineral oil does not hold so small a proportion as is usually supposed, and consequently, the idea of burning the water is not, in its present form, a practical or economical one. It has been so often stated in this lecture-room that our Government is behindhand in taking up improvements relating to naval affairs, that perhaps I might remark that we are not all of the same opinion as to the desirability of adopting changes too rapidly. England is the chief maritime Power, and I maintain we are not even called upon to be the first to initiate improvements that would have the undoubted effect of increasing efficiency without increasing cost, for such, if generally adopted, as in the case of the Whitehead torpedo, would only tend to raise the relative power of the smaller maritime countries. But still less can we afford to allow other nations to have the advantage of such improvements as we have discussed to-day, without adopting them ourselves. I am sure you will empower me to present the unanimous thanks of this meeting to Admiral Selwyn for his very important communication.



Friday, April 24, 1885.

MAJOR-GENERAL SIR FREDERIC J. GOLDSMID, C.B., K.C.S.I., Member of Council, in the Chair.

ON THE NATIVE TRIBES OF EGYPT AND THE SOUDAN.

By Sir WM. SMART, K.C.B., M.D.

THE Soudan is a modern geographical expression, meaning *The Land of the Blacks*, employed to cover all the countries and peoples brought under Turkish or Egyptian rule since 1820, when Ismael Pasha—son of Mehemet Ali—commenced their conquest, which he extended to Shendy, Sennaar, and Kordofan, and perished in Shendy in 1822, by the treachery of the Melek or King of Shendy, named Nimer.

The Equatorial Provinces and Darfour have since been added by Englishmen, Sir Samuel Baker and General Gordon, as Governors-General of the Soudan, appointed by the Khedives of Egypt; the last of whom England is now deploring, he having fallen a victim to the treachery of the conquered races.

This vast empire extends from the confines of Egypt to the Equator, and from the Red Sea to the farthest point of the old kingdom of Darfour. S. and S.E. of the Nile, from Berber and Khartoum, it is a land of uncultivated fertility; and north of that line it is a desert country through which the great river winds like a green cord its serpentine course to Egypt. The population on its banks reside in towns and villages surrounded with belts of corn-lands, divided by groves of date palms; while those of the deserts are nomads dwelling in tents, and running from wells to wells, there to feed their flocks and herds, their horses and their camels. Kordofan and Darfour are countries possessing towns in fertile oases, surrounded with wide extents of sandy deserts. The Nile is the one great natural feature of the region, dispensing fertility wherever its banks shelve off in level plains; and the deserts have across them ranges of hills and mountains mostly of primary and secondary formations, with volcanic veins intersecting them, and between these ranges there are wadys or valleys with springs of water, some abundantly supplied, and others dried up in summer, but these collections of water being stagnant are impure; also rocky valleys, called khors, that mark the courses of ancient torrents, now dried up. It is probable that, by boring, subsoil water might be reached both in the wadys and the khors. Except on the coast of the Red Sea, where they are parallel with the water-line, the mountain ranges run east and west, con-

torting the course of the Nile, and producing its cataracts and rapids. West of the First Cataract, hills of chalk are seen, and mines of rock-salt are found to the west of the Second Cataract, beyond which the elevations are of compact sandstones, granite, and porphyry. Of mineral wealth there is none, but in ancient times, emerald mines were worked in the Red Sea range, east of Assouan.

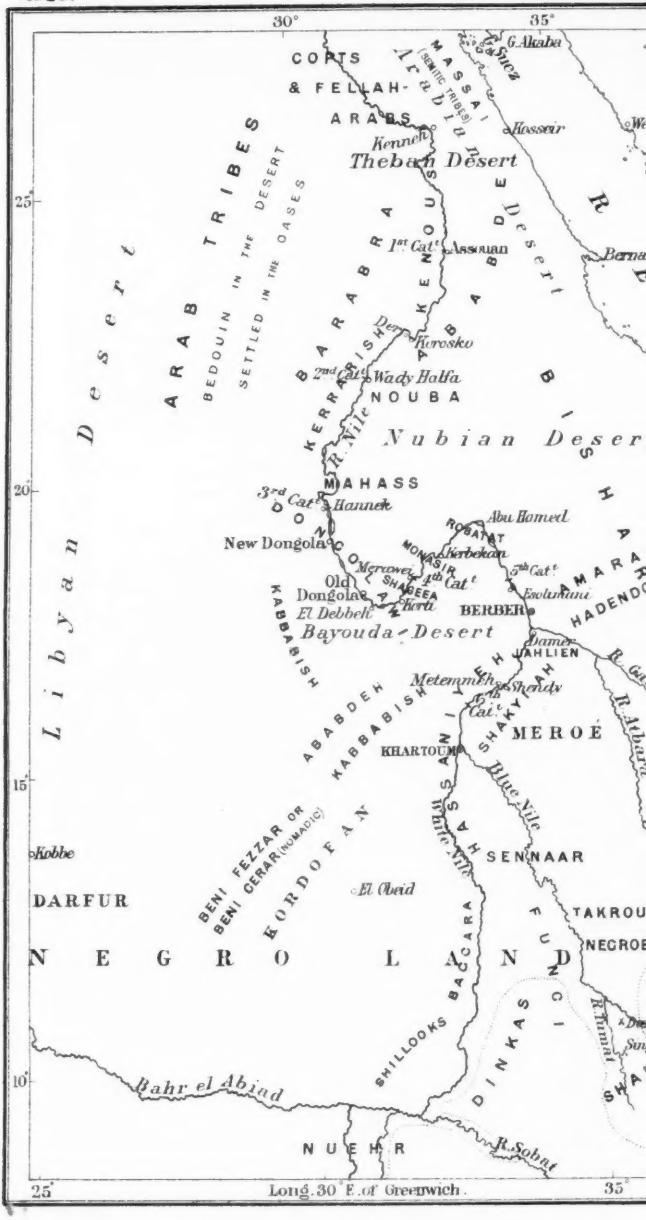
The tribes are all Mahometans, whose chief source of wealth lies in their monopoly of traffic across their deserts, and in the purchase and sale of slaves from Central Africa and Abyssinia.

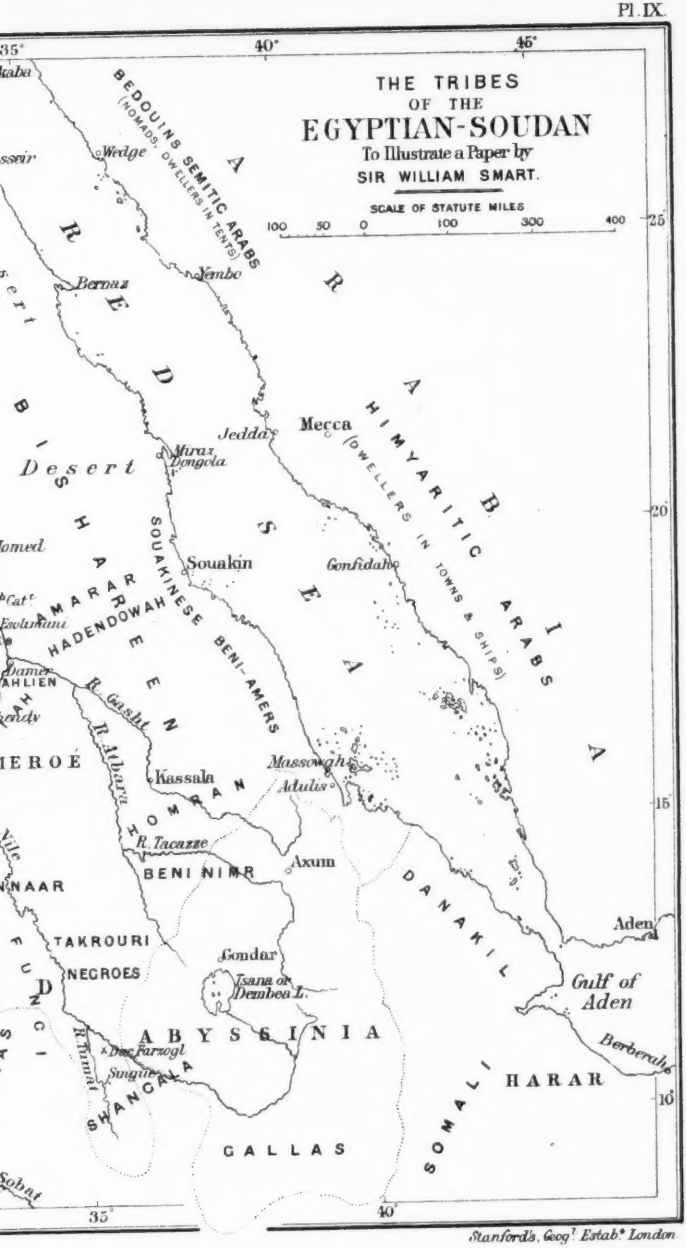
It is difficult to assign definite limits to the Soudan. Its northern boundary is at the Second Cataract, and its southern boundary may be said to be the Bahr Gazelle, beyond which the Equatorial Provinces begin. This covers 12° of latitude, equal to 850 British miles in length, in which the Nile shapes its serpentine course. As far south as Berber, the only fertile lands are adjacent to the river banks, the inlands being sandy rocky deserts. The deserts between the First and Fifth Cataracts are inhabited by Bedouins of various tribes, and probably at no period have they been thoroughly subjected to any comprehensive rule, while the settled dwellers on the banks of the Nile have been governed as minor kingdoms. In the time of Herodotus, the monarchy of Meroé Island had its garrison at the First Cataract, on the same island in the river with that of the Egyptians.

Under the rule of Augustus, the Roman garrison was at "Primis Magna," nearly opposite to Korti; and under the Lower Empire it seems to have been withdrawn to a spot near to Korosko, called "Hierasykaminos," or the Holy Mulberry Tree, north of the Second Cataract, from which the frontier is not likely to have since receded, as the independent tribes within that frontier line — the Ababdés and the Kenous—have always been dependent on Egypt; and this is corroborated by the flight of the Mamelukes across that line into independent Dongola. The Turkish conquest would, therefore, have commenced there.

It may be said that the eyes of the world are just now intent on these regions and their natives, and to form a profitable idea concerning them, we ought to know something of their ancient history. The earliest designations were the Land of Cush and the Cushites, signifying that they bore the name of the eldest son of Ham, whose descendants peopled Mesopotamia, and migrated across the Euphrates, and along the eastern shore of Arabia, and then crossed the Red Sea into Africa, where they settled as Cushites, who, at a much later period, received from the Greeks the name of *Æthiopes*, and their land that of Æthiopia, from two words, signifying "to burn the face," intimating, as it may seem, that originally they were not of black colour like the negroes, either from their own traditions, or in the opinion of the Greeks.

In the course of time, an important stock of the family of the patriarch Shem, viz., the Hebraic stock from Eber, in the descendants of the twelve sons of Joktan or Kahtun—so say the Arab traditions—migrated or joined in the migrations of the sons of Cush, and became consolidated with them, as the people who settled along the south-


30°
35°
25°
20°
15°
10°
25
35
Long. 30° E. of Greenwich.
CORTS
& FELLAH-
ARABS
ARAB TRIBES
BEDOUIN IN THE DESERT
SETTLED IN THE OASES
Libyan Desert
MASSAI
(SEMITIC TRIBES)
Arabian Desert
G. Akaba
Suez
Kosseir
Kennel
Theban Desert
1st Cat.
Assouan
Berne
BARABRA
KERRERISH
KENOUSI
ABABDEH
Desert
Korosko
2nd Cat.
Wady Halfa
NOUBA
R. Nile
Nubian Deser
MAHASS
3rd Cat.
Hannek
Abu Hamed
New Dongola
ROSAIRAT
Merawee
Old Dongola
El Debbeh
Bayouda Desert
BERBER
Shendy
JAHLIEN
Damer
Metemmeh
MEROE
KHARTOUM
Blue Nile
White Nile
SENNAAR
Kobbe
DARFUR
El Obeid
BENI FEZZAR OR
BENI GERAR (NOMADIC)
KORDOFAN
NEGRO LAND
SHILLOOKS
BAGGARA
DINKAS
FUNGI
TAKROU
NEGROE
Bahr el Abiad
NUEHR
R. Sobat



Stanfords, Geog.l Estab.t London

eastern and the south-western shores of the Arabian peninsula, forming as they say the pure Arab race. If this were so, then, by this fusion, the Arabs became early a *Hamitic-Semitic* people. Still later on, from the same Hebraic stem, there sprung the patriarch Abraham, to whose legitimate descendants the Holy Land was given by Covenant, and whose illegitimate sons by his concubines he sent away before his death "eastward, into the east country."

Their descendants were known to the Greeks as the *Scenites*, or dwellers in tents, of north-eastern Arabia. There were six of them sons of Keturah, of whom, in after generations, the names of Sheba and Dedan were perpetuated as those of States in Arabia, either alone or in concert with one forerunner of the same name, Sheba, grandson of Peleg, the forefather of the Abrahamides. To Ishmael and his twelve sons there fell the rich inheritance of the borderland between Syria and Arabia, from Shur to Havilah, *i.e.*, from Egypt to the head of the Persian Gulf. Now, in those days, the land in Africa, from Egypt to the Red Sea, was deemed a portion of Arabia, and into it the descendants of Ishmael travelled and became dwellers in tents, where it is considered they still hold as a distinct race as far south as Cosseir. The Arab traditions relate that Ishmael himself went to the already formed Hamitic-Semitic kingdom of Hedjaz, and married the daughter of Modad, its King, from whom its future Royal race descended. It is necessary to understand this to appreciate that there was Hebrew as well as Cushite affinity in the race that were eventually the occupiers of Ethiopia. It has been shown that the Ishmaelites went by Sinai and the Isthmus of Suez into Africa; but this mixed race, who called themselves pure Arabs, found their way across the Red Sea far south by the numerous islets that lie there, preceded by the pure Cushites, who had already given their name to the country. These, eventually, and probably after they had penetrated across the deserts into fertile lands, which are the special homes of the negro race, became mixed up with them, which they are still prone to do, and produced a very prolific hybrid stock—now called the Soudanese, but originally the Ethiopians.

This may be judged from the physical and linguistic peculiarities that characterize them, differentiating them from all other races in Africa; as marked in the length of the hair of the head, the frequently aquiline nose, the set of the teeth, the straight features, the absence of the special negro odour, the musculation of the limbs, the absence of prolongation of the heels, and the generally lithe form of the body: and by mental, as well as linguistic qualities, which have prevailed in a lesser degree proportionately to their further distance from the Red Sea. But that these changes in types were of a very far remote production is proved by the figures of the ancient Ethiopians extant in the monuments of Egypt, and in that the old Ethiopic language was akin to those of the Hebrews, the Arabians, and the Babylonians.

Such is the generally received account, and so, thus far, all is in accordance with the ethnography of Holy Writ, and that corresponds to what is still evident in the forms and features, and the languages

of the various peoples that have inhabited, from the earliest historical periods, the opposite coasts and inland regions of the Red Sea. There are now, as there were in the days of Eber and his descendant Abraham, two routes of intercourse, by the Isthmus of Suez and that from shore to shore of the Arabian Gulf, of which, according to geologists, the former had been previously a strait, unused, it might be, in primeval times. After the strait was filled up, the descendants of Abraham found their way into Africa by it, and settled, until, as we find them still, they were opposed by pre-occupants, now known as the Ababdé, a branch of the præ-historic Nubian race, which must have come there either from the west or south in Africa, or across the Red Sea from the east. It is worthy of note here that the præ-Islamitic history asserts, from the traditions of the pure Arabs of the southern regions of Arabia, that they came originally across the Straits of Babelmandeb from Africa, and that after wandering far and wide in Arabia and Asia, they congregated again in south-western Arabia, and many of their tribes recrossed into Abyssinia, and into southern Ethiopia, to do which must have taken up an incalculable space of time, but there are remarkable affinities between these two peoples.

The natives of the Nile Valley, with its borderlands towards the Red Sea on the east, and the Libyan Desert on the west, are correctly styled *Hamitico-Semitic*, or mixed races of the descendants from the Noachian brothers Ham and Shem, of whom there is not one word in the Scriptures to justify the assertion that the direct descendants from either stock were negroes. But as the tribes of this Hamitico-Semitic stock penetrated into Africa, and conquered and made slaves of the true negroes, there arose an infusion of blood that altered, in more or less degree by repetition, the characteristics of this stock, without depriving it of the essential Semitic features in the straight or aquiline thinner nose, and comparative development of limb. With regard to colour of skin, it is true that it will darken by infusion of negro blood with that of Europeans, but that will disappear in a few generations if there be no repetition; and even in pure negroes the depth of tint is varied by degree of solar heat, and of atmospheric dryness or moisture, to which a race has been exposed for generations, so that there are several hues of blackness, from raven black to chocolate colour, and to fuscous yellow or brown, amongst pure negro races; but the Hamitico-Semitic or Ethiopians have the tinge of red with black that makes theirs the chocolate colour of skin.

So it is with the hair, which with the Hamitico-Semitic races is long and flowing, and with the Semitic it is shorter and in curly locks, so with negro races it may be pepper-corned, or tufted, or frizzled, and capable of being dressed or coiffured into widely extended mops and tresses, such varieties being criterions of nations or tribes among the negroes, and some tribes of Arabs, without intermixture of their blood; but the hair is more characteristic than colour.

Aboriginally Egypt was peopled from Misraim of the pure Hamitic stock, which still prevails among the Copts, side by side with the Hamitico-Semitic Arab tillers of the soil, the Fellahs, notwith-

standing admixture with Persian, Greek, Roman, and other nations almost innumerable, from the earliest historical times. So much may be said for the almost immutability of the physical characteristics of races. The oldest illustrations of this principle of nature are to found sculptured in the palaces of Nineveh, and in the frescoes of the halls and temples of the Pharaohs, where the features of Egyptian, Hebrew, Ethiopian, and Negro are as definitely exhibited as by these races now after three or four thousand years, and even two types of the negro are discernible there, that from the Sahara in the west, and that from Kaffraria in the south. This proves how slowly the slightest changes are effected in features of any race.

The Ethiopians and the Egyptians were from their earliest history distinct races of men, of whom the former asserted their priority of settlement in their country which was separated from that of Egypt by 500 miles of sandy desert, and a river abounding in cataracts and rapids, so that a lengthy period elapsed before they approached each other.

The question arises, assuming Babylonia to have been the centre of dispersion, by what channels did these nations reach their settled homes?

For the aborigines of Egypt, it may be said that their traditions and myths pointed in a north-east direction, by water conveyance, towards Phœnicia, the home of the great navigating race that colonized beyond Egypt, Carthage, Iberia, and the farthest isles of the Mediterranean, and in their progress the mouths of the great river would naturally have been the first resting place up which they sailed, each fresh arrival founding a small independent kingdom on its banks. Their earliest mythology would appear to have been the worship of the sun-god—Baal—in his several phases, and Astaroth—the Urania or celestial Venus of the Greeks—which involved the adoration of the heavenly bodies. The archaic sculptures of their earliest Kings are, it is said, representations of some Eastern race, unlike those of a later date which have Ethiopic features.

On the other hand, the Ethiopians were a dark race, whose affinities were of Arabia, or as some have thought of India, who got to the Nile higher up in its course, and seized on fertile lands there. Their extension was northward along the banks of the Nile until they reached the neutral Island of Elephantine, on which they stood, garrison to garrison, with the Egyptians. Wherever they may have come from, they were the Cush of Holy Writ; and their language was akin to those of Babylonians, Chaldeans, Hebrews, Arabians, and Northern Abyssinians, and not with those of India or of Egypt. Their religion was of a more spiritual character than that of Egypt or of Phœnicia, consisting in the worship of Ammon, with obedience to his oracles, and in the worship of Bacchus, both apparently derived originally from India; the first being, as it has been thought, the symbol of the uncreated, invisible, and omnipotent Brahma, and the second the symbol of the creative force of Nature, represented in Brahma—the first person of the created Trimurti of the Indian religion. The worship of Ammon extended to Egypt beyond its

limits, however, to the Oasis of Siwah, wherein was the temple of the Oracle of Ammon, sacred things apart from the affairs of the world —supreme above all the idols of Egypt, consulted on questions of the highest national importance.

The Ethiopians owned also a powerful hierarchy, and a monarchy —the monarchs being elected by the priests, who possessed power to pronounce their death-warrants. After these were destroyed by Ergamenes, the succession was often held by Queens, who were called Candaces. In these things Ethiopian polity differed from that of Egypt. It is at least a curious ethnographical fact that the so-called Island of Meroé should have been the focus of any noteworthy amount of Asiatic civilization, resembling a vitalized kernel within a shell of African barbarism, the only exit being by the valley of the Nile, along which its traces are recognizable into Dongola.

There is some interest, although there may be but little profit, in the inquiry of "How did this civilization gain its immured position: Did it arise there among the natives of the soil: Was it conveyed there in the migration of a race: or could it have been brought there as an appanage of commerce just as the Islamic faith, with its social relations, became established among savage Africans in the upper basin of the Niger? Or, can it have been transmitted through Egypt along the banks of the Nile, to this southern region fertilized by its waters?"

The only difficulty presenting itself to my mind lies in the superiority of the religion of Ethiopia over that of Egypt, and its remarkable affinities with that of the Iranian race. History affords no light; and wanting that, this argument weakens if it does not destroy the supposition that civilization made its way at first up the course of the Nile.

Let us now leave the regions of the long past and its inhabitants, and survey the races or tribes occupying their seats.

A line drawn from Kenneh on the river to Cosseir on the Red Sea will cut off the Arabian Desert on the north in which dwell the Semitic or Ishmaelite Arabs, who are distinct from all other peoples of Africa, and south of it are the Ababdés, who claim to be indigenous. They occupy from the coasts of the Red Sea to the skirts of the Lybian deserts, and are continuous south with the Kenous, Kerrarish, or Barabras, and having been through all ages the chief porters in Egypt, as well as the carriers and camel drivers of caravans from it to Sennaar and Darfour, branches of their race will be found here and there along that track, and greatly to the south of Dongola, forming one of the primary types of Ethiopians. Another line on the east of the Nile from El Der, the chief place in Nubia, to the coast separates from the Ababdé the Bishareen Bedouins who lie east of the desert track from Korosko to Abu-Hamed, south of which they bear the name of Bisharye-Arabs, and south of these that of Hadendowahs, who are of the same stock, extending over the deserts between Suakin and Berber. Suakin gives its name, as Berber does, to a far extended district, and it has been suggested that the Suakinese are identical with the Sukkim, who came with the Egyptians, the Lubim, and

the Ethiopians, and sacked the temple of Jerusalem in the reign of Rehoboam.

It is said that none of these tribes speak Arabic, and only a gibberish of their own, which may be a relic of the ancient Ethiopic tongue elsewhere extinct. South of them on the frontier of Abyssinia there are tribes that use the prefix Beni, the Arabic for "sons of," and consequently it may be supposed that they claim an Arab descent as the Beni-Amer and Beni-Nimr. Between these are the Homran Arabs, a noble race of barbarians, whose affinities are Bishareen. These races, in many differently named tribes, fill up the great desert region between the Nile and the Red Sea.

On the northern limit the consanguinity is with the people of the Syrian desert, and on the southern there is an affinity to the northern Abyssinians and the southern Arabians. All that can be said of the intermediates—the Bishareen—is that they do not use the Arabic language, but a special one, in which respect they differ from the Ababdés, who use both tongues, and are more civilized in their manners, and claim to be indigenous. On these grounds I can credit the hypothesis that the Sukkim of Scripture were the present Suakinese or Hadendowahs of the great Bishari race of the Soudanese.

Of the Barabras on the east of the Nile Burckhardt writes thus, p. 23:—"The country which I had passed from Assouan to Derr: 1st, the Wady el Kenous, from Assouan to Seboua; 2nd, the Wady Nouba, from Seboua to N. Dongola. Of these the first is inhabited by the rab Kenous, who derive their tribe from the deserts of Nejd or Nedjèd, and who settled here at the period when the great Bedouin tribes from the east spread over Egypt.

"The KENOUS are subdivided into many tribes, who are frequently at war from jealousies towards each other. They adopted the indigenous, and gave up the Arabic language. As far as Edfou on the Nile no Arabic sounds whatever are heard, although they claim Arab descent. Their language has no Arabic sounds whatever, and is spoken all the way south of Assouan as far as Seboua, 25° north, and in every village to the north of Assouan to Edfou. These people are closed in between Egypt and Dongola, in both of which Arabic is exclusively spoken.

"The KENOUS and NOUBA are much the same in way of living and in their manner.

"At Derr piastres and paras were unknown before the invasion of the Mamelukes. Derr is the chief place in Nubia.

"The KERRARISH, or southern Kenous, pride themselves on the beauty of their girls, and refuse them to the Nubians. They are a remote branch of the Ababdé.

"At Kette, ten miles south of Derr, the people speak Arabic as well as Nouba. They are quite black, but have nothing of the negro features. Their hair is very thick, but not woolly, cut above the neck, and twisted all over in thin ringlets.

"The MAHASS, inhabitants of a province of Dongola, pretend to be Koreishites, to which the Prophet belonged, and which were in part Bedouins, and in part husbandmen. It is a tradition of Mahass that

a large party of Koreish took possession of their wady at the same period when numerous Bedouins from the east invaded Egypt and Nubia. Their countenances are much less expressive of good nature than those of the Nubians; in colour they are perfectly black; their lips are like those of the negro, but not the nose or cheek-bones; numbers of men go quite naked, and I even saw several grown-up girls without anything whatever around the middle. The Nubian language here has certainly superseded the Arabic, which none of the peasants understand. From Mahass to Sennaar, along the Nile about thirty-five days' journey, there are upwards of twenty Kings and kingdoms, every independent chief being styled Melek.

"Mahass is the nearest place in the black country from whence slave traders arrive at Cairo, the distance being about 1,000 miles."

The Dar Mahass lies on both sides of the Nile, between Sukkott on the north and New Dongola on the south—say about 20° N. latitude, between the Nubian and the Libyan deserts, and if they justly claim to have descended from the Koreish of Arabia, they must have got in Africa a strong tincture of Nubian blood, as their original language—Arabic—has been lost amongst the peasants, and that of their new country, Nubian, has taken its place.

Mahass, at 1,000 miles from Egypt, presents itself in the light of a transitional ethnographical spot in Nubia, where the line is in some sort drawn between the tribes described as related to Egypt, and those of the Upper Nile related to the ancient Kingdom of Meroé or Ethiopia. It was a province of Dongola that once ruled over middle Nubia, until it fell to the Shegyans, and afterwards to the Mamelukes expelled from Egypt.

The observation is quoted from Burckhardt, who visited the country previous to the Egyptian conquest, is that from Mahass to Sennaar, along the Nile, that is its greatest curvature (of about 600 miles), there are upwards of twenty independent Kings, styled Meleks. This organization indicated a different order of things from what was then existing in Middle and Lower Nubia, where Dongola had its sovereign King, and the Ababdé their chief sheikh.

The Kenous, the Nuba, and the Dongolawi are of one stock, differing in their dialects, and all claim an Arab descent; they are all on the Nile. The Ababdés and the Bisharis do not claim an Arab descent, and appear to be branches of one family, but one speaking Arabic, and the other a loose jargon of unintelligible words; and all seem to be of Mahometan religion. The Dongolese are possessed of a fine breed of horses; and they prove themselves to be excellent horsemen.

Reverting to the Barabras of the western bank of the great river, who claim to be Koreishites of the same tribe with the Prophet, they extend from the First to the Second Cataract, where they come into contact with the Lower Nubians who are Bedouins of Dongola, and it must be borne in mind that all Bedouins or wandering tribes are ruled by their elected sheikhs, formerly independent but now the tax-gatherers for the Pashas of their provinces, of which Dongola is one of the greatest.

The Dongolawi extend from the Second Cataract to the great north-east bend of the river, and they hold the direct road across the Bayouda desert to Darfour, along which the caravans travel to and from Cairo. South of them the desert tribes are of *Ababdés*, *Kabbabish*, and *Hassaniyeh*, which is, perhaps, the most numerous tribe in the province having its centre at Khartoum, its north flank nearly to Berber through Metemmeh, and its southern for two and a half degrees to Hassaniyeh Island, on the White Nile, where it gives way to the *Baggaras*, who are in touch with the *Shillooks*, a fine pure negro race, having flotillas of raft-canoes on Lake No and the Bahr Gazelle, in which they make raids on the Arab tribes lower down on the White Nile. They seem from their modified features to be a transitional race between the negroes and the Arabs. These are the tribes or nations that follow each other after the Kenous in the desert route eastward of the Nile.

Besides these two routes—one on the east towards Abyssinia and the other on the west, to Khartoum and the Equatorial Provinces, there is that across the Nubian and Bayouda deserts, which commences at Korosko, to be considered. These grand deserts are separated by the great bend of the river from north-east to south-west, from Abu-Hamed to Old Dongola, on which the battle of Kerbekan was fought, and which, being then the frontier of the Ethiopian Empire under the Candace Queens, afforded the last battle-field to the Romans in the reign of Augustus, who, it would appear, being a peaceful monarch, thought it the best policy to treat the Ancient Ethiopians as he had treated the Ancient Britons subsequent to the invasion of Julius Cæsar, by leaving them free from further molestation; for they had their Candaces when Britain possessed a Boadicea and her daughters capable of commanding their forces in the field.

The northern part of the Nubian Desert was the home of Ababdé Bedouins; the central was that of the Nouba, into whose territory projected the Dar El Mahass from the east bank of the Nile, the chief occupation of whose tribes it was to make raids among the Nouba and to capture them for slaves to be sent to Egypt. These Mahass, it would seem, were possibly a hybrid race of Arabs with Nouba, and that their country was to the Romans a transition spot betwixt the manners, customs, and religion of the Egyptians and those of the Ethiopians.

The Nubian desert is bounded on the south-east by the reach of the Nile on which lie Ambukol, Korti, Meroé, the Fourth Cataract, Kerbekan, and Abu-Hamed, forming the ultimatum of the Romans, for on it was their furthest station on the northern bank of the river, about opposite to Korti, now held by our troops. It was named "Primis Magna," and at about 150 miles lower down the river, near Dongola, there was "Primis Parva," which station it seems they held for no long period. All this historic ground was then *the northern frontier of Ethiopia*, ruled over by a Queen or Candace, who according to Pliny (Lib. v, cap. xxix) had an army of 250,000 men, and was able to repel the Romans to Ibrim, near Derr; and their successors, the Byzantines, from that remote station to Hierasykaminos,

near to Korosko. The Ethiopian Empire was then declining from what it had been in the reigns of the Pharaohs, when it frequently gave Kings to rule over Egypt, and established one (25th) dynastic succession of three monarchs; whereas of the Pharaohs only one—and he the grandest of them, Sesostris—ever ruled over Ethiopia.

In surveying the busts of him and others of his race of sovereigns collected in our Egyptian gallery (B. Mus.), the idea will force itself on the minds of many that they came of a mixed race, and testify to an equality of the Egyptian and Ethiopian Royal families by intermarriage. The names of Aktisanes, Tirhakah, Zerah, Sabacon, and Ergamenes are those of Ethiopian Kings famous in Holy Writ, or in Egyptian history. In addition to those, from the typical features of their profiles which I have alluded to there is reason to think the dynasties of the Pharaohs who raised Egypt to its highest position in its history in the 16th century B.C., there was a miscegenation between the two races.

Again, Josephus states (in Bk. ii, cap. x) that the Ethiopians having ravaged Egypt to the sea-coast, and his generals having failed in resisting them, the King of Egypt gave the command of his army to Moses, who drove them back into this Island of Meroé, and was besieging the capital, when a princess named Tharbis seeing him from the battlements, and falling in love with him, she sent proposals of marriage which he accepted on terms that the fortress should previously be ceded to him, which being done, a marriage was consummated. Fantastic as this story to some may appear, yet it is corroborated by the solemn recital (Numb., xii) of the causes of sedition raised in the camp in the desert of Sinai, by Aaron and Miriam, "because of the Ethiopian woman whom he had married; for he had married an Ethiopian," as thus openly asserted. From which it may be assumed that such unions were of high caste, in the adopted country of Moses.

Assuming the battle-ground of the Nile to have been in the days of Augustus the frontier line of Ethiopia for military purposes and for defence from the Roman power, no doubt can remain that its defenders were the choicest troops of which the Ancient Ethiopia—now the Soudan—could boast; and recently the battle of Kerbekan has proved its present natives to be valiant soldiers, amongst the bravest of modern Ethiopians. It would even seem probable that in this region, if not at this line on the great river, Cambyses gave up his march in despair. It was here the Romans were baulked of farther conquests; and it was here that Ismael, the valiant son of Mehemet Ali the Great, met with his only resistance in his conquest of the Soudan. These are remarkable incidents in the history of this region.

The recorded invasions of Ethiopia date from the 18th dynasty, of which the Kings of Egypt, Thothmes and Amenoph, about 1650 B.C., are credited with having made them; how far they proceeded, and the routes by which they went, which, however, can only have been across the deserts, are untestified. It is not likely that they subdued the Ethiopians.

Sesostris subjugated them about 1580 B.C., and the priests of Sais represented to Herodotus (II, 102) that "embarking on long ships he proceeded out of the Gulph of Arabia into the Erythrean Sea, and subjected the inhabitants of the shore, * * * and sailed back to Egypt." Diodorus Siculus states that *Sesostris was not present in person*, but sent four hundred long ships, that took possession of the islands in the Red Sea. Herodotus mentions (II, 110) that he *was the only Egyptian that ever ruled over Ethiopia*, and that in the rock-memorials he had sculptured to mark his conquests, his figure was attired in half-Egyptian and half-Ethiopian style, "which might have signified either his double kingship, or that he was of mixed race."

CAMBYSES went into the Nubian desert, and there sacrificed his army by starvation, and he returned insane. How far he progressed is unknown.

The PTOLEMIES, warned by the disasters of Cambyses, did not invade Ethiopia, but they undermined and subverted its commerce with Arabia and India by occupying the port of Adulis, and establishing the Greek-Abyssinian Kingdom of Axume that attracted that commerce through it to a great extent.

The ROMANS, under Petronius, attempted conquest by the route of Cambyses. They laid waste as far as Napata, a large frontier town (20 B.C.), which they sacked. This was done to avenge an inroad as far as the First Cataract, by a Queen of Ethiopia. Peace being made, the Romans returned to their previous stations near to El-Der and Korosko. In the reign of Nero they explored to Meroé.

The SARACENS pushed their conquests across the deserts to the frontiers of Berber, and the fortress of Abu-Hassan, on the right bank of the Nile, in the Robatat country, may possibly have been their farthest stronghold, in a castle of brick.

The OTTOMANS, under Selim the First, who subdued Egypt, fixed their furthest garrison on Say Island, north of Dongola; but it fell to the son of Mehemet Ali to conquer the whole of the Ethiopian Empire, and to go beyond it, including the kingdoms of Sennaar, Kordofan, and Darfour. This invasion took the western bank of the Nile for its marching route, conveying its stores on the river, avoiding the worst part of it between the Fourth and Fifth Cataracts by crossing the Bayouda desert to Berber, near to the old Saracen castle of Abu-Hassan. It was Selim who seized the Red Sea Coast in 1518.

The BRITISH have substantially followed the same route, but making use of the river, both for troops and stores, as far as Korti, and from it crossing the Bayouda to Metemmeh. We cannot err much in supposing that the tribes assembled to oppose the advance of our troops have been those of the immediate district or province, the sheikhs of which have adopted the views of the Mahdi. It is even conceivable that it would be as difficult for them as for ourselves to march 10,000 men across any considerable extent of desert. I have met with only one description of the composition of such an army; it is of that which met General Stewart's small force at Abu-Klea, and there fought desperately:—"The Mahdi sent down 5,000 men to Abu-Klea; these were Baggara-Duem men, who lie west of the

White Nile, east of Kordofan, and south of Khartoum, perhaps Shillooks, but they called themselves Duem men; short-haired men" (for this reason they were most probably negroes). "The local tribes were more than these, consisting of Hassaniyeh, Jahlien, divided into three different tribes (Abadieh, Gibiliab, and Hamiab), Shakyeh, and a mixed lot of Berberines.

"The Duem people from South Kordofan seem to have lost most in proportion. One thousand arrived from Perim, and only twelve survived. The Ababdé tribe (north of Khartoum, at the base of the Bayouda desert) were heavy losers, as the prisoners stated that they had lost 600 out of 1,100 men." This was a native account, and it seems reliable, as our best maps show the latter tribes on their grounds in the quadrangle within Khartoum, Berber, Abu-Hamed, and Debbeh.

For General Earle's opponents at Kerbekan, the only tribal names were local, the Shagiyeh and the Monassirs, with reinforcements from Berber. In the battles near Suakin, all appear to have been Bishareen, and made up of Bisharye, Arabs, and Hadendowahs, although many subdivisions, with the names of their several sheikhs, have appeared. One tribe, the Beni-Amers, have so far held aloof, or have shown a disposition to desert from the Hadendowahs.

"The same life was uniformly pursued by roving tribes of the desert, and in the portrait of the modern Bedouins, we may trace the features of their ancestors, who, in the age of Moses or Mahomet, dwelt under similar tents, and conducted their horses, and camels, and sheep to the same springs and the same pastures. * * * When they advance to battle, the hope of victory is in the front, in the rear the assurance of a retreat. * * * * According to the remark of Pliny, the Arabian tribes are equally addicted to theft and merchandize; the caravans that traverse the desert are ransomed or pillaged; and their neighbours, since the remote times of Job and Sesostris, have been the victims of their rapacious spirit."

If what Gibbon thus wrote of the Arabs of the Asiatic deserts be equally applicable to those of the deserts of Africa, then, here as there, the tribes are the same as they were during the old events I have alluded to. The glories of their ancestors may have departed from them in the lapse of a thousand years, but they have now shown that they are as dauntless as at any time in their history, and that the love of freedom still dwells in their breasts.

When, in this century, the Shegyans of Merawi again met the invader in the field, it was with an ardour that gave way only after they had stood face to face with artillery, which had been till then unknown to them; but now, as we know, being familiarized with its use, they "rush" as they did then, and fall dead before the cannon's mouth. We know not how much might be done with an army of such men drilled and disciplined, as European nations can do with Asiatics and Africans.

The story of that invasion, as narrated by a United States General, G. B. English, is replete with interest, and on comparing that with our late experiences, that the races of the Soudan have improved as

men and warriors, in no small degree under the dire oppression it has undergone, it may be inferred.

Hoskins states that in crossing the Bayouda desert he had two Shegyans as camel-drivers. "They were fine, tall, warlike-looking fellows, with their hair dressed almost like the Ababdés, of whom he had two from the Nubian desert; but the Shegyans usually wear beards and moustachios. Their complexion is decidedly darker than that of the Ababdés, which is a dark brown, but theirs is a darker brown, and sometimes almost approaches to a black, but still very different from the cold colour of the negroes. The Shegyans have occasionally wider nostrils than we would think correct, and rather thick lips, otherwise their features would resemble exactly the European.

"It is a circumstance, perhaps, worthy of remark that some of the most perfect heads sculptured on the pyramids, at Gibel-el-Birkel, had almost a European profile.

"The SHAGEEA—the brave tribes who now possess the magnificently rich and fertile plain near Gibel-el-Birkel, and whose territory extends on one side nearly to the Fourth Cataract, and on the other to Dongola—have, notwithstanding the darkness of their complexion, nothing of the negro features."

The valley of the Nile throughout the country of the Shegya is nowhere more than 3 miles in breadth; in several parts of the river are small cataracts, where the mountains on each side nearly join. There are few crocodiles in this part of the river; and the hippopotamus is not met with, as there is no stillness in its waters. Beyond the Shegyan country there is that of the Monassirs and the Robatats, equally ferocious with the Shagyeans. For 150 miles betwixt the Fourth and the Fifth Cataracts the river is narrowed between precipitous rocks here and there, and is diversified with very frequent rapids. It was in that district that Stewart and Power met their sad and undeserved fate by shipwreck and treachery; and it was there the battle of Kerbekan was fought to avenge their treatment. Onward the Berberines are the native race, of whose bravery less has been heard. They are said to be the least barbarian of all the races of the Soudan, more occupied than any other in pursuits of commerce with manufactures of their own to meet the demands of the people of the Atbara, and the plains of Shendy, or the Island of Meroé, the ancient centre of Ethiopia's empire. It is, from all reports, old and new, a country as fertile, but not now as cultivated, as the Delta of the Nile; and its people are by far the most licentious in their manners, amounting to the most open profligacy. Slavery exists there in its most debasing characteristics. When Hoskins was there it was called El Mekhyer as the capital of the old kingdom of Berber. It had large intercourse for trade, as shown by the tribes seen by him in it. Hoskins, in 1856, with reference to the southern tribes, writes:—"Besides the *Ababdés* and *Bisharees*, I saw individuals of several other tribes who visit Berber, while others I only heard of. Among these are the *Hassaniyeh*, who range from Berber to Kordofan, principally near Dongola—the *Kabbabish* to the south-west of the

latter, extending to the White River—the *Beni-Gerar*, from Dongola to Kordofan, in the desert—the *Erfurah* near Sennaar, a large and powerful tribe called *Rafurah*, numbered with the Erfurah—the *Shukriahs* settled principally near Shendy, but also between Berber and Sennaar, and between the Atbara and the Bahr-el-Azrak. The *Eddibina*, also near Shendy—*Djanielyeh*, on the Bahr-el-Abiad—the *El-Amaram*, to the east of the Astaboras—the *Shillooks*, negroes, ten days up the White River, or Bahr-el-Abiad. They are said to be tall, powerful men, armed with bows and arrows, spears and shields, and I am told that they worship the sun, *i.e.*, they are not Moslim. They have many islands on the river, and intercommunicate in large canals, the river being there ten times wider than the Blue Nile. The *Num-num* (? Nyam-nyam), are also a negro race of naked Pagans, twenty days' journey from Sennaar on the White River. All these tribes, except the two last, are wholly or partly tributary to the Pasha of Egypt." Of these, the Ababdé, whose home is in the Thebaid and northern part of the Nubian desert, are the carriers between Egypt and the Soudan. The Bishareen are the Hadendowahs from between Berber and Suakin; the Hassaniyeh dwell on the eastern bank of the Nile along the Bayouda district to Khartoum, and far up the White River in possession of its islets. They are probably the most numerous and important race of the region. The Shakeyieh with the Eddibina, and the Halfayans are on the river border of the Island of Meroé, while the Djanielyeh and the El-Amaram dwell in the deserts between the Atbara and the Blue Nile. The Homram Arabs, who are on the eastern side of the Atbara in the wilderness of forests and floods that lie between the Soudan and Abyssinia, are a fine race of excellent horsemen, who pursue the largest of African game—the elephant, the lion, and the rhinoceros. The Shillooks are negroes of the most graceful build, and they are possibly transitional with the Arab race. They were the founders of the Sultanship of Sennaar in the very beginning of the 16th century, which held sway through three and a half ages over the vestiges of ancient Ethiopia, which never became an appendage of Egypt until Sennaar was secured to it, and even then it struck off the yoke again in 1843, but only for a brief interval.

Our survey has touched Khartoum by the route through Dongola, westward of the river, and now we have reached it by the river route, and have crossed the Bayouda desert to it. It is unmentioned prior to Ismael's conquest, and its growth is the great phenomenon of semi-civilization amidst barbarians. It is said to have contained, at the beginning of 1884, not less than 200,000 souls, all in a state of as fair prosperity as possible under a Government unrelenting in its oppression by excessive taxation. It was fast becoming a modern Timbuctoo, and in spite of its late misfortune there is no reason why, with a benevolent Government, it should not become the greatest and most civilized city in Central Africa, to which its grand situation seems to predestine it.

Of the tribes in Kordofan it is said by Hoskins in his travels in Ethiopia, 1833:—

The Kabbabish.—These Arabs are also found in the Bayouda desert. They possess camels and horses, and they transport merchandize to Sennaar, Darfour, and Dongola.

The Baggara.—They possess flocks, and are hunters of the elephant and the giraffe.

The Beni-Gerar have great abundance of horses and camels. They are generally engaged in transporting merchandize to Darfour. They are often at war with the Kabbabish.

The Hammer are chiefly cultivators. They possess also camels, and trade to Darfour, but do not come to Dongola. They are occupied in tanning the skins of animals, and the Government employs them in their hunting expeditions for slaves. Their arms resemble those of the other Arab tribes—the oval spear, the lance, and the sword.

The Hadoyeh are cultivators, and join the expeditions of the Government like the Hammer. They possess good dromedaries.

The Messabouee are cultivators, and also assist the Government in their slave expeditions.

Donaglish, peasants of the country—cultivators.

Konjurah.—A tribe from Darfour. Their present chief is Sultan Tema. Each of the other tribes had a Melek, or King, for its ruler.

These brief notices suffice us to show that the Arab tribes of the Western Soudan differ in no essentials from those of the Eastern, nor from those of the Arabian deserts. The observations were made in 1833. We have here presented to view a race of several tribes, each governed formerly by its own chieftain as Sultan or Melek, but is now ruled by a foreign Pasha. Some of the tribes are cultivators of the soil, some are breeders of sheep and herdsmen, some breeders of camels, or dromedaries, or horses, with which they perform the transport of merchandize across the Bayouda and other deserts between Dongola, Kordofan, Darfour, and Sennaar. Some are hunters of the elephant and giraffe, and others are tanners of the skins of wild animals, in which the produce is excellent and the traffic is great. The arms they use are those typical of the Arab, viz., the oval spear, the lance, and the straight sword; but now, with fire-arms, the produce of the chase has been greatly enhanced. We are taught also that in the early period of Egyptian occupation, the trade in slaves being a Government monopoly, the subject tribes were employed to make raids upon the negro villages. Since then, all that has been changed, and the trade has fallen into private hands, which being embarrassed by philanthropic checks not their own, animosity has been aroused amongst those who were enriched by it.

In the deserts, where they are ruled by their own sheikhs, they are as independent and as free as the soil, the water, and as the air they breathe. Their haunts, their dwellings, their food, and domestic animals are unaltered. In arms they are still redoubtable warriors of the spear, the buckler, and the sword. As Christians, they were almost unheard of through five hundred years; but as Moslims, their fanaticism, their barbaric blood-thirstiness in war, and their treachery have made them terrible to their foes, as headlong in assault, and neither seeking nor giving quarter in battle.

In attempting a classification of the various peoples found in the great Nile Basin, it may be said that it is the home of four or five stocks of the human race, each subdivided into several tribes.

1st. There are the Misraim or Copts, still extant in Egypt, as its business men and small landholders.

2nd. The Ishmaelites or Massai, occupying the narrow strip of desert between Egypt and the Red Sea, as far south as Cosseir. They are nomads.

3rd. The Ababdé Bedouins, roving the deserts from Cosseir to Cape Bernus, the Thebaid Desert, and as far south as the northern part of the Nubian Desert, and beyond the Nile westward. They are found again south of Dongola, at the base of the Bayouda Desert, on the tracks to Khartoum, Kordofan, and Darfour. In all cases they are dwellers in reed huts plastered with mud, and their riches consist in herds of dromedaries, by which they carry on the traffic across the deserts to and from Egypt, where they are much esteemed for their honesty and their fidelity. If, as it is supposed, they were the Icthyophagi of Herodotus, they were then the linguists of the region as far as the Island of Meroé, and as such they were 2,500 years ago as much the commercial agents as they are still.

There is a sub-type, the Barabras, or Kenous and Kerarrish, who are the boatmen of the river from Cairo to the frontier of the Nubian Desert, but they do not speak Arabic, as the Ababdé do, yet they claim to be Arabs, which the Ababdé do not, and they decline intermarriages with the Arab Fellahin of Egypt on the north of them, and with the Nubians on the south. They are all Mahometans.

The Dongolawi and the Nubians are thought to be of the same stock with the Barabras, and the former are breeders of fine horses and camels, while the latter are peasant cultivators of the soil. The country of the Nubians was much exposed to slave raids by the people of Dar Mahass, who claim to be Arabs, although they do not speak Arabic. South of Dongola, from it to the White Nile, the Ababdé and the Kabbabish conduct the trade of the deserts; and in Sennaar itself the hair is tressed as it is among the Ababdé of Upper Egypt, from which affinity may be inferred. It is probable that one strain of blood pervades all these tribes from the border of the Red Sea along the west bank of the Nile into Sennaar.

Most likely the Ababdé and the Bishareen are sub-types of the same stock; at least there is insufficient evidence to prove they are not so, nor that they are not the aboriginals, or that they are now less civilized than they were when there was an Ethiopic kingdom, made up of a highly cultivated central State and barbarous surroundings extending to the limits of Egypt.

4th. The Bishareen are east of the Nile and southward of the Ababdé. They are occupiers of the rocky hilly deserts down to the frontiers of Abyssinia. In their physique, save in the dressing of the hair, and in greater strength of body, they resemble the Ababdé. But they speak a jargon of their own only, and in manners their ferocity contrasts strongly with the mildness of the Ababdé in general. They are said to eat raw flesh and to drink the warm blood

of living animals. They comprise the Handabs, Amarars, Suakinese, Hadendowah, and on the Abyssinian frontier the Bazen and Homran, of whom not much is known beyond the wild forests and torrents of their mountainous country that give a home to the largest and fiercest game, which they hunt on horseback with great success.

The Homran are the most westerly of these tribes, and they are separated by the Atbara from the Island of Meroé, in which lie the remains of Ancient Ethiopic civilization.

5th. The tribes representative of the Ancient Ethiopians are still the most martial, the most civilized or least barbarous, and the most commercial of all the Soudanese. They extend from the Abyssinian frontier across two bends of the Nile to the southern limit of the Nubian Desert.

This corresponds to their own northern frontier with its rock fortress—Gebel-Birkel—beyond which the Romans dared not to proceed, is occupied by warrior-tribes, Shagyeans and Monassirs, who were the only opponents in battle of the modern invasion by the Turks.

The Berberines, the Shendyans, and the Halfayans, represent the most civilized natives of the Ethiopic Nile, who at the period of that invasion were enriched by the commerce of Sennaar and of Central Africa, through their towns to Massowah and Suakin, for Arabia and Persia.

Since that conquest Khartoum and Cassala have been founded, and have risen to importance as emporiums for the same commerce. Not only is the province remarkable for the enriching fruits of trade, and the warlike disposition of its tribes, but it is also that in which there are established schools of Arabic literature and philosophy, and of Islamic theology. One of these centres was at Damer in Meroé, near Berber, at the junction of the Atbara with the Nile; and another at Hannek, in the Shagyean country, on the great bend of the Nile, which is so famous in the history of Ethiopia, and to these surrounding tribes send their youths for education. Berber is a manufacturing town to meet the special wants of its region and the southern countries; and Metemmeh is that of the prayer-mats used by all Mahometans. Such was their state at the time of the invasion of Ismael, and most probably Khartoum has risen to greater trade in these articles than the older towns ever possessed.

In ancient times this region was the most enlightened of any south of Egypt; and it still maintains that character and position, owing to its great fertility and its superior commercial position.

The conquest in 1821 was an easy one, and the Soudan long remained submissive to the conquerors, but it has now thrown off the yoke of Egypt. No other nation has done so much as our own for the welfare of Africa, and to our race are due most of the greatest discoveries ever made within it. To my mind, it would seem not a fortuitous event that has brought England into such close relationship with the natives of the basin of the Nile, at the juncture when other civilized nations are doing their utmost to open up to civilizing commerce the Congo and the Upper Niger.

No discussion ensuing—

The CHAIRMAN said: My experience is too small to enable me to discuss the subject very closely, but I think, in an ethnographical point of view, the paper just read will form an interesting addition to the records of this Society. When our Officers return from the Soudan—whether from Suakin, or Dongola and the Upper Nile—their experiences of the tribes, some of which have just been mentioned, will doubtless give a new interest to the inquiry. A great deal naturally depends upon what will be our future position with regard to these parts. If we remain in the Soudan, a knowledge of its tribes will be doubly interesting; and in such case we may also look forward to the fulfilment of the bright hopes expressed by Sir William Smart. I say this because I believe that Khartoum may be made a great centre of civilization. Nor must we look upon the efforts recently made on the Congo as quite isolated. They bear more or less directly on the progress of events in Khartoum. The two localities together may contribute much towards the suppression of slavery and the advance of civilization. On the other hand, if we do not remain in the Soudan, the state of its tribes and people will still prove to us an important ethnological question. I regret that a want of previous acquaintance with the details of to-day's paper read to the meeting has prevented me from offering any prepared remarks on the subject. But I feel sure you will join me in thanking Sir William Smart for the great trouble which he has taken in putting his data together for the benefit of his hearers, as well as in furnishing the Institution with a record which merits careful perusal, and will afford a good basis for further study.

Sir WILLIAM SMART: I thank you very much for the kindness with which you have listened to my paper on what may be to many a very uninteresting subject. I must admit for my own part that since your Secretary invited me to read a paper on the tribes of the Soudan, I have found the subject a most interesting one, and one on which I might have easily occupied you for not one but three meetings. I thank you very much for the kind consideration with which you have listened to me.

Friday, May 29, 1885.

ADMIRAL THE RIGHT HON. SIR A. COOPER KEY, G.C.B., &c., &c., Vice-President, in the Chair.

ELECTRICITY AS APPLIED TO NAVAL PURPOSES.

By Lieut. W. A. CHISHOLM-BATTEN, R.N.

I. Application for General Purposes.
II. Application for War Purposes.

THESE are in some cases mixed, and there is no sharply defined line between them—take electric lighting as an instance. The ordinary internal lighting of a ship is quite distinct in itself from search-lighting, though produced by much the same means. They have both grown independently; but in a ship of war, the great object should be to combine the two.

Electricity is a great power in skilled hands, and can be used with safety and certainty even by slightly trained men, if only enough care and thought be taken in designing electrical appliances, to make their use easy and abuse difficult.

The applications of electricity on board ship are various, and differ greatly. Sometimes it is necessary to use the electric force in such a way that it has power to melt any metal, to produce an intense light rivalling that of the sun, to propel a vessel, or to give severe and even fatal shocks to those handling its mechanism. At other times it is so gently applied that although it acts through the human body, it cannot be felt by the most tender child; and at others, it is so exquisitely sensitive that it will carry faithfully the distinct tone of a certain voice, and indicate a change in its neighbourhood so slight as the movement by inches of an ounce of lead.

The two properties of the electric current which are generally made use of are, first, that of causing heat when a comparatively great resistance is placed in the circuit; and, secondly, that of giving magnetic properties to any conductor through which it passes.

An apology is due for going into matters so simple, but in case there may be some who may not be familiar with these points, they will be briefly explained.

Electricity for naval purposes is produced by what may be termed a generator, which is generally either a machine deriving its power from the burning of coal, or a battery deriving its power from the slow burning of zinc.

The next part of any electric appliance to be considered is the circuit, that is to say, a conductor, generally metal, which allows the

current to circulate from the generator to the place of application, and back again. This is generally formed of copper or iron wire.

The part of the conductor or lead which goes from the generator to the place of application may be called the main, and the part which comes back may be called the return.

When the result desired is the developing of heat or light, a high resistance, that is a small conductor, or one of a comparative badly conducting substance, is introduced in the circuit at the desired place.

For instance, if the electricity originally obtained by the burning of coal, and then carried in an accumulator, be allowed to pass by a main wire which must touch the accumulator, to an incandescent or glow-lamp and back by a return wire, heat and light are produced in the thread of carbon in the lamp, which has a high resistance.

Or again, if the electricity produced by the burning of zinc in a battery be allowed to pass through the main to a small wire and back again, sufficient heat is produced to fire a charge of gunpowder.

When the result required is an exertion of magnetic force, the simplest, or at any rate the most familiar, form is the electric bell. In a circuit from a battery which slowly burns zinc, a current passes round a coil of wire, causing it to act as a magnet and to attract a piece of iron which makes the clapper strike the bell.

Or again, if the current, originally obtained from the burning of coal, be allowed to pass by the main to a magnetic arrangement and back by the return, the result is magnetic action which causes motion, and is sufficient to drive a boat or any useful machine.

Thus much of the simple principles of electricity.

Electric Lighting.

The most important application of electricity for naval purposes is, perhaps, the lighting of ships.

Electric lighting is almost entirely carried out by an extension of the simple appliances which have been described. The current passes from the electric machine or generator along the main to the lamps and back by the return; that is to say, the illumination in a ship of war is carried out by a large number of glow-lamps—usually about 300—of about 20 candle-power, that is, 20 wax candles, 8 to the pound. The electric machine is usually driven by a steam-engine.

The advantages claimed for the use of electric lighting on board ship are many of them applicable, as you will notice, to its use on shore.

1. It is cheaper than oil—at any rate than the oils allowed to be used on board men-of-war, and still more so than candles, which have hitherto been the general illuminants.

2. There is far greater safety from fire, as there is no occasion for carrying matches about or lighted candles, which in spite of rigid rules are often used naked. This is hardly surprising when one hears of the trouble which has to be taken to avoid naked lights being used in mines; the use of electric lighting also does away with that incubator of fires—the lamp-room.

3. It hardly heats the air, and does not foul it at all.

Many merchant steamers and some ships in the Navy are thus lighted, the principal reason against its extended use in the latter being the fact that men-of-war pass much of their time without getting up steam, but in troop-ships it has been almost universally introduced.

Andrews and Co., of Glasgow, have just completed on board the "Etruria" a large installation which, in its proportions, surpasses anything that has hitherto been attempted in the application of electric light to steam-ships. The "Etruria" carries about 850 lights, and a brief description will no doubt be interesting. Swan glow-lamps are used, and of these 90 are distributed in the engine-room, stoke-holes, &c. 103 lights altogether are used for lighting the main dining saloon, 84 of which are suspended over the tables in 3-light electroliers hanging from the ceiling. The remainder of the lamps are in small brackets and pendants so as to give light over the side seats. Above the saloon is the music-room, having 17 lights round the walls and over the piano and organ. The smoking-room has also 17 lamps. The remainder of the lamps are distributed about the ship, 172 being in the state rooms.

Besides the actual internal lighting of ships, electricity is used for the bow and masthead lights. I understand that the Board of Trade does not object to the use of the electric light for ships' side lights, but it requires oil lamps to be kept in reserve in case of failure. With regard to masthead lights, however, the Board discourages the use of electricity, partly on the ground of its liability to get out of order in consequence of vibration, and partly in consequence of the brilliancy of the light tending to interfere with shore lights, and cause confusion. It is in fact not used for masthead lights, and only in a few cases for side lights, and it has not been thought necessary to issue any general instructions, though the Board of Trade is now in communication with the Admiralty on the subject.

On this point there has been some discussion. The first lights used were very much brighter than the oil lamps which they replaced, and caused mistakes from their being taken for lighthouses, or from the distance of the ship using them being misjudged. There is, however, great advantage in their use, from such use securing certain knowledge that the lights are all right. This is effected by the current passing to the lamp through an indicator on the bridge—in view of the Officer of the watch.

The ordinary lights carried by ships-of-war when cruizing in company are now in some cases electric; and the electric light has been ingeniously adapted to signalling purposes.

One of the most complete arrangements got out by the well-known firm of Sautter Lemonier is as follows:—

Two groups, of five glow-lamps each, are suspended at a certain distance above each other, and the current is allowed to pass to one or more of them by a key-board in the deck-house. In order to prevent mistakes, the signal is set before the current is allowed to pass to the required lamps, and this setting lights up a corresponding signal in

front of the operator, thus:—He wishes to show four lights, and puts four lamps in connection with a main switch. In doing so, he uncovers four little illuminated windows in front of him. Satisfied by the appearance of this signal, he switches on the current from the generator, confident that his signal will be correct. A switch is merely a means of connecting or disconnecting one conductor from another, as is also a firing key, which will be mentioned later on. Or the signalling may be done by hoisting the light and signalling with the key; or again by dipping the light in a bucket. There is also an application of the glow or incandescent lamp for the purpose of coaling or doing other work at night. In this case a group of about a dozen lamps are placed under a reflector which is triced up to the yard-arm, so as to light up the deck of the ship and the coal wharf or vessel alongside.

The glow-lamp is also useful for the diver, either in thick water or at night; but special precautions have to be taken to prevent the globe being broken by pressure, and for this purpose it is enclosed in a second thick glass globe.

The electricity for the lamp is either derived from above water through wires kept carefully dry, and not touching any metal, or it is in some cases provided by a battery carried by the diver with the lamp.

Messrs. Siebe and Gorman's lamp is of the latter kind. The lamp is mounted in a parabolic reflector fixed to the side of the battery box. The battery will keep a constant light going for four to five hours.

We now come to a different form of illumination, called the arc light. In this arrangement, a suitable current of electricity is allowed to pass through two carbon rods in contact, and then they are slightly separated. The effect of this resistance or space introduced into the circuit by separating, is to produce a very brilliant light, proceeding partly from the heated carbon rods, and partly from a luminous arc between them.

This light is very intense, too much so for many purposes. The carbons burn away, so that some arrangement is necessary for bringing them within the proper distance for the arc, and for replacing them when entirely consumed.

This arc light has been used for internal lighting, masthead lights, and coaling lights, but the necessity of having some apparatus for feeding the carbons and other causes have forced it to give way generally for these purposes, to the simpler glow light.

For the search light, however, used for discovering torpedo-boats approaching a ship, bombarding forts, and so on, the arc light is a necessity, as great intensity is required. The search light is a warlike appliance, but had better be considered in connection with other uses of electric lighting. It is very useful for other purposes, such as clearing the anchor at night, and such peaceful, or at any rate unwarlike, operations. When the arc is used for a search light, its rays are all collected by means of lenses or mirrors, and projected in one beam, so as to get the strongest possible light.

The difference in power is immense between the glow and arc lights

in ordinary use at sea—the glow-lamp representing only a few candles, seldom more than 20—but the arc as now used, about 25,000, and a far more intense arc light has been produced on shore.

A boat can be discovered by it at a great distance.

In the West Indies, in a fine clear atmosphere, a building has been picked out clearly enough to be aimed at with a gun, at a distance of two and a half miles, the light used being about 8,000 candles; but great difficulty was experienced in keeping the beam on the object, as one could not see any distance unless standing away from the light.

To obviate this, means have been devised for directing the beam by an observer at some distance from the lamp.

The search lights in general use are worked by a man who screws the carbons together as they burn away; this method, undoubtedly crude, has been adopted chiefly for simplicity's sake, but it is high time that a suitable automatic lamp—that is, one which is self-feeding—should be introduced, and that the directing of the beam should be in the hands of the observer, although he is necessarily at some distance from the light.

The electric lights belonging to the ships have been considerably used during the operations in Egypt; one was landed, generator and all, at Alexandria, and another at Suakim. The light was also much used at the latter place from on board, for discovering the approach of the enemy at night.

For signalling, the arc light has been used for many years, the process being to flash the beam up in the sky in longs and shorts, using the Morse or some similar code.

To show what may be done in this way, it may be mentioned that during some of the electric light night exercises carried out at Portsmouth from the Torpedo School, the flashes of a light of about 20,000 candles were distinctly seen 31 miles from the ship, a low range of hills intervening; and a similar light was reported to be seen still further when shown from a tower of the Philadelphia Exhibition last year.

Again, some ships being anchored in Ragusa and others in Gravesa, signalled to each other in spite of the hills between, by flashing an arc light up in the sky.

There is no difficulty in lighting up a building at 2 miles distance with a 20,000 candle light.

Electric Communications.

From signalling by the light at a distance, one passes naturally to other means of communication for which purpose electricity is more universally used than for any other.

Telegraphy in the nature of things is not in use much outside the ship, from the difficulties of bringing in the wires with a ship swinging round her anchor; but means have been devised for this useful object, which are especially applicable to light ships: telephones, and so on, can of course be used from a ship moored head and stern—in fact, light is sometimes supplied in this way.

As regards electricity within the ship herself, the uses are manifold.

The ordinary electric bell I need hardly dwell upon, but the two appliances most especially required in men-of-war are first, a means of knowing the speed of the vessel at any time, and secondly, of telegraphing distances of the enemy ascertained in the tops, to the Captain and gun batteries.

I am not aware of any method, which is in very general use, for obtaining the first result. But there are numerous approaches to it.

There are many instruments which give the speed of the ship or engines for a greater or less period of time, but what is required in a man-of-war is to know the speed at any instant.

Various electric logs do the first, that is to say, the space passed over can be noted during any period, but the speed at a given instant is not shown. Even an instrument which showed at any instant the speed of the engines would be a useful improvement.

The principle of most electric logs is that the revolutions of the fan periodically close a circuit. When this is done, a dial hand moves on one division, usually a tenth of a mile. If, then, the electric log be joined up to a recorder in the Captain's cabin, and another in the chart-house, and set at noon, both the Captain and the Officer of the watch can see at any time how far the ship has run since then, or since the last time the instrument was looked at.

The difficulties of a joint which shall connect two conductors, and yet be able to stand continually being revolved, appears to have been dealt with in an original manner in the "Dollond" log; the principle is protected by patent, and is applicable to the attachment of wires, for signalling to light ships or other vessels swinging round their anchors.

This log will be sufficient to give an idea of these instruments.

The log used in the Navy for recording the distance passed over by a ship consists in a fan which is towed on the quarter of the ship, and which, as it revolves, shows the number of miles passed over on a dial plate attached. The disadvantage is that it has to be got on board in order to see how much distance has been run.

Other logs which are much used in mail steamers have a fan towing, but the recorder is on the taffrail, and is turned by the towing line.

The disadvantage is that the recorder can be in one place only, and only one recorder can be used.

It is claimed for the electric log that it is more trustworthy than the taffrail log, and more useful than either, in so far as one or more recorders can be placed in any required position. The advantage is obvious in any ship in cruizing time; but in a ship of war in action, its value is enormously increased, for it is easy to place telephones in connection at any required point in the pilot towers, at the Whitehead directors, gun directors, and gun deck, for in firing a gun it is necessary to know speed, and still more necessary when firing a torpedo.

It indicates at once any mishap to the log, by fouling or carrying away.

It saves the labour, loss of time, and error of registration involved in hauling in the log, which can remain in the water, unless fouled, until entering port.

The instantaneous registration of the distance run between two bearings enables navigators to calculate with accuracy their position in reference to a light, headland, or other fixed object.

The indicator can be re-set on board at any moment.

The addition of a small self-contained apparatus and a bell, which can be placed with the indicator or in any other part of the vessel, communicates by sound the regular working of the log, and enables the Officer on watch to detect any irregularity and to take instantaneous bearings at given distances, without referring to the indicator or the log.

A distance indicator, devised by Lieutenants Jackson and Anson of the "Vernon," has undergone already a trial in the "Excellent" and "Vernon," and has been favourably reported on, the indicating hand is rotated in either direction, one step at a time. A spring brake prevents it from being thrown out of adjustment by the concussion of firing heavy guns. A bell is fitted in the receiver which rings each time a signal is completed. In the transmitter, a red disc shows when the circuit is completed, and the battery running on circuit. The instruments are carefully protected from wet; they will work in any position, and are entirely unaffected by damp and gun-fire; two wires are used with each circuit for connecting transmitter with receiver. The commutator, however, is of delicate construction, and the springs on the armatures require careful adjustment for efficient working with low battery power.

The great defect seems that there is no method of telling whether the two instruments, transmitter and receiver, are indicating the same signal, and if the battery be left on circuit for long it may fail to work the instrument.

The telephone is used from ship to shore, when ships are moored. In the "Vernon" one was used to the Captain's house and found most useful. Through this telephone, some eight years ago, an Officer recognized Professor Bell's voice, which he only knew from having heard him lecture in London, and he did not know the Professor was in Portsmouth.

The application of the telephone to diving is most valuable, and in my experience was perhaps the means of saving a man's life. He was just able to say, "Pull me up," and was found quite insensible. It is strange to be capable of hearing a man below water, a mile away, as well as if he was at your side. Some difficulties were experienced at first, but have now been completely overcome. The same apparatus can be adapted for use on shore.

Telegraphy for parties landed, though not a usual equipment, is very useful, and I have been shipmates with a small field telegraph consisting of a couple of sounders and reels of wire carried by men.

For automatic indicators, electricity may be used to indicate too great a rise of temperature in any compartment, to indicate if the ship is off her course—this is similar to an arrangement which will be

described for steering a torpedo—or to indicate if the barometer falls beyond a certain point.

The application of electricity to testing the lightning conductors of ships is so simple that any trained seaman can obtain the resistance, without delicate instruments, with fair accuracy.

The propulsion and steering of boats by electricity is a subject which almost requires a separate paper to itself, and although sometimes used for war and sometimes for peace, the appliance is naturally similar whether a boat be carrying a torpedo or a policeman. Some particulars of two boats which could carry either may be interesting.

The "Electricity," which was fitted by the Electrical Power Storage Company two years ago, and which has run successfully many hundreds of miles, is 25 feet long.

The "Australia," built by the order of Messrs. Stephens, Smith, and Company, is of the same length; batteries or boxes of stored electricity in the boat, work a screw propeller. The cost of the "Australia" is about 180*l.* complete.

Each boat carries eight besides the coxswain. Speed about 7 or 8 knots.

The advantages of electric propulsion are—

(1.) Entire absence of noise in the boat; in fact the only noise is that caused by the plash of the water against the boat's bows.

(2.) No smoke to interfere with the man steering.

(3.) No "flare up," which is practically impossible to prevent in very fast boats from the great draught up the funnel.

(4.) No heat, which tells so much on the stokers in a torpedo-boat.

(5.) Not so large a number of men required as in a steamboat.

The disadvantage of this form of motive power is of course the necessity of having means to re-charge the cells again after use; but should this prove a successful experiment, regular charging stations could easily be provided for a boat to go alongside and have her cells charged, as, for instance, night patrol boats could be charged alongside a jetty during the day for use at night. From the absence of heat this form of motive power would be most valuable in very hot climates.

The various appliances in a submarine cable ship are special in their character, and are hardly to be considered generally naval.

One of these is a cable creeper which has a push in angle of the creep, so that if it catches a cable it rings a bell.

Now in the descriptions about to be given, reference will be often made to "testing." This testing is for the purpose of seeing whether the circuit, including the actual place of application, is in good order. The principal test is to see that the conductor and appliance have a complete circuit. To do this, a small current is allowed to pass round the circuit, too small to cause any appreciable heat, or to work the magnet, but large enough to affect an indicator or ring a bell, which only require a small current, thus showing all is correct. Should there be any break in the circuit, the little current cannot pass, and so cannot ring the bell or affect the indicator.

The current is supplied by a battery. A simple test battery and indicator will easily show whether there is any break or not in a coil of wire, or any electric circuit.

Electricity Applied to War Purposes.

Firing Guns.

We will now consider the applications of electricity to war purposes afloat, the first, the one considered most important, being firing guns.

The method of firing guns by electricity is simple.

The method of heating a wire by passing electricity through it has already been explained.

To fire a gun, the electric current is allowed to pass through a piece of fine wire surrounded by powder, and placed in the vent of the gun. A firing key is used to allow the current to pass from the battery through the main wire to the little tube of powder in the gun, and then back by the return. If a very small current be sent through the circuit, it will not heat the resistance; and if it be made to ring a bell in the pilot tower, the Officer in charge knows that the circuit is all right.

Some of the advantages of firing guns by electricity are as follows:—

When firing a broadside of guns together, if electricity be used, it is fired much more simultaneously than when using hand firing; and when firing single guns, the action is more instantaneous. This may be illustrated by a well-known machine. Any man trying to fire a gun at a certain time, or when certain objects are in a line, is only more or less successful in doing so—generally less.

Another very important advantage of firing guns by electricity is that they can all be fired by an observer clear of the smoke of the gun-deck.

Again, the guns can be fired from a bullet-proof pilot tower as the ship passes close by the enemy by any one person or the Captain himself, the crew lying down or being placed out of the way. This is especially advantageous in ships which have their guns on the upper deck exposed to machine-gun fire.

Again, there are cases where the object cannot be seen from the gun, and electric firing provides an easy means of firing from aloft on the mast. Thus a ship in the Suez Canal fired at a train in motion, which was only visible from aloft, and hit it.

Again, the gun can be aimed at a fixed floating plank, and be arranged so as to fire when the plank is touched. In fact, it acts as a spring gun against torpedo-boats.

Electric firing for a single gun was recommended by the Chilian Officers after the action in which the "Huascar" was taken, as the most likely to be effective.

It must be allowed that there is the disadvantage with electricity of the chance of damage being done to the circuit, but this would be

shown by the bell in the pilot tower. On the other hand, the advantage is that its use simply alters a heavy pull off to a light one—in fact it may be called a hair trigger.

Automatic Firing.—This is an arrangement for firing when the ship is rolling; for instance, the gun is required to be fired when the ship is upright, then the circuit passes through a balance so arranged as only to connect the two parts of the circuit, that from the generator and that to the gun, when the ship is upright; so that directly the ship is in that position the guns are fired.

The method is claimed to have been brought to great perfection, but is not so simple as it looks.

Electricity may be used to light up the foresight at night. An appliance for this purpose has been invented by Captain McEvoy, the well-known torpedoist. It consists of a little battery and glow-lamp, which is screened except in the direction of the foresight. The electricity has to pass through a similar arrangement to that mentioned above for automatic firing, so that the lamp is only lit when required.

It is capable of a much more practical application than automatic firing, as a wide margin can be allowed to cover any error from the rolling of the ship.

It seems specially useful for resisting night torpedo attacks.

And now for torpedoes, which come next, at least, in importance.

Electricity is used for firing, propelling, and discharging torpedoes.

Just a word as to what torpedoes are. They are movable submarine charges of explosives, used offensively.

The name "torpedo" is, oddly enough, derived from the electric fish, but I do not suppose he who first applied the word ever thought that electricity would be so much used for firing these charges.

Firing Spar Torpedoes.

The spar torpedo is the simplest form, consisting of a charge at the end of a pole, which is put under an enemy's ship, and exploded.

For this form of torpedo electricity is now exclusively used, and the arrangement is usually as follows:—To the battery a firing key is attached by a wire. This key is joined to the main, so that on pressing the key the circuit is complete through a fuze which is similar in principle to the glow-lamp and which is in the torpedo, then back by the return to the battery—an exactly similar plan to switching on lamps or firing guns.

There is also an arrangement by which the battery is joined to the main direct, and the main goes to an automatic firing key in the head of the torpedo, which acts on striking, then by the fuze and return wire back to the battery.

A combination of these methods is generally used, though probably a separation of them would be better. The spar torpedo, though so simple, has at present the greatest score—at least half-a-dozen ships—against travelling torpedoes, one; and towing torpedoes

none. The cases occurred in the American Civil War, Russo-Turkish, and Franco-Chinese wars.

As in the case of the gun, a small current can be sent through the fuze, and can ring a bell or work an indicator so as to show the circuit is correct.

Firing Towing Torpedoes.

The next torpedo, which to a great extent owed its want of favour in our Service to being introduced without electrical means of ignition, is the towing torpedo. This is, I believe, always fired by contact with the enemy's ship. When electricity is used, the circuit is from the battery to a contact piece in the torpedo, then to the fuze, and back by the return to the battery.

Though we are only concerned with electric firing, it should be explained that if any other method of exploding a torpedo is used, it is, after once being made dangerous, equally so to friend or foe.

With all electrical appliances the removal of the wires from connection with the battery renders the torpedo as harmless as a box of explosives can be.

Batteries are the usual generators for firing torpedoes. Sometimes, however, an exploder is used in which the power is derived from a man's muscular action.

Firing, Propelling, and Steering Fish Torpedoes.

Fish torpedoes claim our attention next, and there are many kinds of them; but those with which electricity is used are few; in them the force developed in some part of the circuit is made use of to produce motion or put the rudder one way or the other, or simply to fire.

When electricity is used for igniting the charge, all torpedoes are fired in a similar way to one of those described for the spar and towing torpedoes, namely, at will or by contact.

1. There are torpedoes which are propelled from, and controlled from their base, as the Sims, named "controlled torpedoes."

2. There are torpedoes which contain their own propelling power and are uncontrolled and unconnected with the position from which they are started; for instance, Paulson's. They have been called "auto-mobile" torpedoes.

3. There are others which contain their own propelling power but are connected with and controlled from their "base;" for instance, the Lay. They have been called locomotive.

First, those *driven* by electricity.

This is done either by electricity stored in accumulators and put in the torpedo, or through wires bringing the electricity from the base of operations.

In addition to fixed submarine mines, it has been considered necessary, in some cases, for coast defence to make use of a controlled motive torpedo, principally for attacking ships which attempt to clear a passage through the submarine defences.

For this purpose a torpedo is required having the following properties:—

1. Long range.
2. Handiness with the helm.
3. A heavy charge, so as to be dangerous even if stopped by a ship's net defence.
4. Security from enemy's fire.
5. Power of passing floating obstructions.
6. Not easily seen or stopped by enemy.
7. A motive power always ready, and not dangerous.
8. Constant speed to end of run.
9. Charge exploded at proper depth, for a charge on the surface is comparatively harmless.

The torpedoes of Ericson, Lay, Howell, Whitehead, &c., are not considered by some good judges to fulfil these requirements as completely as that of Sims.

Common defects are, great complication, difficulty of preparing and keeping the torpedo ready, danger of explosion from the substance which drives it, great exposure to fire of enemy, want of speed, charge at the surface, &c.

The Whitehead is considered unsuitable on account of its comparatively short range, because it cannot be steered, and for other reasons.

The Sims torpedo is of the ordinary cigar or fish shape, and is driven by a current of electricity from a generator on shore, which passes through a wire laid out by the torpedo as it goes, and works a screw propeller. The torpedo can be steered and fired by electricity from the shore through the same cable. The torpedo is suspended a few feet below the surface from a float which is just awash. There are two different sizes—the larger carrying 2 miles of wire and a charge of 400 lbs. of dynamite.

The 2-mile torpedo is of copper so as not to rust, and is about 28 feet long. The cable, which will just sink, is carried in a chamber to which the water is freely admitted, so that the buoyancy of the torpedo is but little increased as the cable is paid out. The charge is in the head. The wire chamber, which has a short tube underneath leading aft, through which the wire is paid out, is in the centre, and the driving and steering gear are in the after part of the torpedo. The steering is done by a separate current from a battery; the helm can only be put hard over either way, and when released is brought amidships by the action of the water.

The torpedo is suspended by strong steel frames about 4 feet under a boat-shaped copper float of about the same length as the torpedo, but whose bow is a few feet further aft. A steel cutwater connects the bows, and, as it slopes downward and forward from the float, tends to force the torpedo under any boom or floating obstruction it may meet with.

The float is built in water-tight compartments, and filled with some buoyant substance, so that it is difficult to sink it. It carries the usual two upright rods—one with a white, the other a red ball

in the day time, and lamps at night. The rods are pivotted with counter-weights so as to give and lie flat when passing under an obstruction, and to rise again when clear. The speed is said to be 12 knots.

The cable is of copper wire, and a small insulated wire in the heart of the main cable is used for steering.

The torpedo may of course easily be arranged to fire on contact if required. When it was tried by running at a spar, a spectator who was in a boat near did not see it, although watching for it, until it was within 500 yards. The torpedo hit the spar in two successive trials within 4 feet of the point aimed at, and the marks on the spar were $1\frac{1}{2}$ feet from each other.

The float has been riddled by bullets, and yet remained serviceable.

The great disadvantage of the torpedo is its want of speed. Some less clumsy method of maintaining it at its proper depth would, doubtless, very much increase the speed.

There is no doubt an advantage in controlled torpedoes which have their motive power on shore, and therefore have to carry less weight, but they can be only used from a special base.

Then those *steered* by electricity, though with some other driving power.

The Paulson Torpedo.—In this fish torpedo the steering is electrical. The motive power is supplied by liquefied carbonic acid. This torpedo is automatically steered in a direct or straight course by means of a mariner's compass, the needle of which, on any deviation of the torpedo from its course, makes contact with one or other of two insulated studs situated on either side of one end of the needle, and completes an electric circuit; a lever then causes one propeller to revolve at a quicker speed than the other, and thus steer the torpedo and bring it back to its set course. Supposing the torpedo to be approaching an ironclad, the mass of iron would cause the needle to make contact with one of the studs and the torpedo to be steered directly away from the ironclad, unless its path were due north and south (magnetic), and, to prevent this, a needle of a second compass in the head of the torpedo is arranged to short circuit the battery when attracted to one side or the other by the mass of iron.

The shell of the torpedo is made of compressed waterproof paper pulp, which is light and strong, has no effect on the compass needles, and is not easily affected itself.

In order to render the weapon more effective, it may be controlled over part of its course by means of an electric cable paid out from the torpedo as it progresses, and by which the current from a battery on shore or on a ship is conveyed to the two magnets so as to steer it on any desired course. When the whole of the cable is paid out, it is automatically detached, and the self-steering apparatus comes into operation.

The Lay Torpedo.—This well-known weapon is another example of the application of electricity to steering a torpedo. It is driven by other means, but lays out an insulated cable as it runs, and through this it is steered. It carries a very heavy charge, and is usually run

just on the surface. It has not made such rapid improvements as the Whitehead in point of speed. The usual rods or lights are used for directing the torpedo, and very good practice is said to have been made by it.

It has not been fortunate in war, for although there was a rumour that during the late war in South America a Chilian vessel was blown up by the Lay, I do not think that was the fact. There was an attempt to use it from a ship in the same war, but that method could hardly be expected to be successful.

Discharging Fish Torpedoes.

The simplest form is to ring an electric gong as a signal for the man standing by the torpedo to start it, for it must be understood that it is usually started from somewhere down below in a ship, and therefore it is necessary to have somebody up above to decide when it is to be sent on its journey. An improvement is, at the order "Ready," to full cock the discharging arrangement, the same movement connecting up an electric circuit which has only a break on deck, and which, when traversed by a current, puts in motion the machinery for discharging the torpedo.

Another and greater improvement is the torpedo tube, being fitted on the inside with a cartridge, which, when ignited, projects the torpedo.

The clutch, which keeps the torpedo in the tube, is arranged in such a way that when withdrawn it makes electric contact with an otherwise insulated binding screw on the right of the gun.

The torpedoes are arranged to be discharged by an Officer who is in the pilot-tower. In this case the firing key is in the pilot-tower, between the battery and the place of application, and there is a break at the tube, so that there are two breaks in the circuit; when very nearly at the moment for firing, the word is passed down, when the lever is pulled by hand, freeing the torpedo and making contact at the gun. The torpedo is then fired by pressing the key in the chart-house.

The torpedo battery, which may be considered as a part of a defence system, has been devised to defend any channel left in mines for the passage of friendly ships.

It consists of a submarine framework, in which are fixed torpedo tubes, each holding a fish torpedo.

The observing station, which may be distant and quite invisible to an enemy, is connected to the battery by a wire which goes to an electric fuze.

A weight released by the explosion opens the valve of the engines and frees the torpedo from the tube.

Firing Submarine Mines.

Submarine mines are used by ships for the purpose of defending themselves, or any harbour in which they may be lying, or for the security of which they may be responsible, or for dropping behind

them when retreating. They are charges of explosive, defensive and fixed, fired under water.

The difference between torpedos and mines is this:—If you want to be blown up, you must go to the mine; but if you don't want to be blown up, you must stop the torpedo coming to you.

The electrical methods of firing them are two: (1) firing at will; (2) firing by contact.

The observation method of firing at will may be briefly described as firing a submarine mine when the enemy is within range of the effect of its explosion.

There are two difficulties in carrying out this otherwise certain and simple plan. The enemy may not come within the range of the mine, and when he does you may not know he is there.

With the first difficulty we have nothing now to do.

The second must be considered, as on it depends the difference between the two electrical methods of firing mines.

The simplest, and in its usual form, perhaps the worst plan, is by the method of cross bearings.

To go back to our circuit.

There is a generator in this case, a battery that is on shore. The main wire goes from the battery to No. 1 observer, from whom the mine bears, say south, that is, the mine is directly south of him, then passes through his key; then goes to No. 2 observer, who has the mine, say, due east of him, and who also has a key. The main then goes on to a fuze in the mine, and the return takes the current back to the battery.

A word about return wires: the resistance of a conductor depends, other things being equal, on its size; the earth being large does not offer much resistance, and is often used as a return wire.

Now the circuit is not complete unless No. 1 and No. 2 both press their keys. A ship comes in. If ever she is south of No. 1 he presses his key. If ever she is east of No. 2 he presses his key; but the keys are never pressed together unless the ship is south of No. 1 and east of No. 2, that is, over the mine.

This system has lately been well described by an eye-witness, and I dare say you will understand his description better than mine.

"And now we are going to fire 'by observation.' There is a mine of 18 lbs. of gun-cotton down yonder, 2 feet under water, and that barrel there is an enemy's ironclad steaming up the harbour. But she may also run close by without actually touching it. This contingency has been provided for by putting the mine in electrical connection with two observing stations. Yonder is one perched up there some feet above the water. It is a wooden shed, constructed so as to be readily taken to pieces and put up again wherever it may be desired. In actual service, it would probably be half buried in the ground, and the front of it protected or rather concealed by a bank of turf. There are two of these observing stations at different points of the compass, but both on the same electric circuit. The observers within them are keeping the object glasses of a couple of small telescopes following the ship there as it approaches the mine.

"These telescopes are so mounted, that until they both point exactly to the destructive area around the mine, the electric circuit by which it is to be automatically fired, is incomplete. The enemy might pass too far from the explosive underneath the water to be much affected by it. In that case there would be no use in firing. The two telescopes looking from different points of view, would not at any instant converge their lines of sight at the mine, and there would always be a break in the circuit. The ship would go on her way. She is working straight for the mine, however. The gear of one telescope clicks into a sort of notch, and one break in the circuit is repaired. Click goes the other telescope. The circuit is complete; a tiny piece of platinum wire is instantly raised to a white heat inside the mine, and up goes the ship, a volume of water leaping into the air, some of it to the height of a church steeple, bearing with it fragments of the unlucky tub that has done duty for the foreign ironclad, which, under similar conditions, would not have gone up in the air probably, but would have had a hole knocked in her bottom which would speedily have sunk her."

Other methods are the camera obscura; the plane table by a telegraph from the second station; firing all the mines in the neighbourhood of the ship, so that one of them must hit her, and so on.

The plane table is electrical. The telescope at one station works a ruler at the other, and when the observer finds this line and his cut over a mine, he fires.

"Observation" firing cannot be used at night or in a fog.

The other system, that of contact mines, is different. To start from the battery, the circuit goes to a contact key in the torpedo, and on to the fuze; when the torpedo is struck, then back by the return.

A ship must actually hit this mine to set it off. The ship in fact blows herself up. She may pass close to any number of mines, but only a small charge is required.

The electrical disadvantage of this system is, that you cannot send a small current through for testing, unless a boat or a friendly ship bumps the mine for you. This has led to complicated additions. The simplest of these is a very high resistance which bridges over the break in the circuit, so you can always send a small testing current round the circuit; but when the mine is struck, enough current will go through the fuze to fire it.

The next addition was by means of a further appliance, so that the action of a ship striking the mine could be imitated.

This has been arranged by causing the magnetic effect of the current passing through the high resistance to attract the other side of the break in the circuit, so as to cut the high resistance out.

This is useful in two ways—it gives a far more trustworthy test than a simple resistance, as it stands to reason that a delicate instrument which works all right in the mine shows no serious damage is done to it; and again, it is possible by this means to fire a mine as well as by the contact of an enemy's ship.

There is another means of testing an electric contact mine—viz.,

to have a telephone in the mine with a ball on the diaphragm, so that the motion of the mine in the water makes a noise in the telephone.

Electro-mechanical mines are those which carry their own battery inside. This saves wire, but if the mines are picked up, is extravagant in boats and men's lives.

In these mines means must be used to keep the mine safe, while being laid down. This is effected in the simplest form by keeping the wires apart, and joining them at a safe distance when the mine is laid.

The dynamiters imitated a very common form which works by means of some chemical action. They put acid on blotting paper, and got away while the acid was eating through it. This mine was without a circuit-closer.

These electro-mechanical mines were used for the defence of Suakim, and were very successful, or seemed so, for after the explosion of one mine, the night attacks, to guard against which they were laid, ceased for two months.

The Torpedo Detector.

This consists of a sinker, which is a heavy case, and a box, designed to be carried in a boat, from which the cable hangs. It can be so adjusted that no sound is heard in the receiver. If, now, the boat is pulled slowly through the water and the sinker is thus dragged along the bottom, no noise will be heard in the receiver unless the sinker comes into proximity with some mass of magnetic metal, such as a torpedo case. In this event, however, a humming noise will be heard in the receiver.

A slight and imperfect sketch has now been given of the appliances which come under the heading of this paper, and I think you will agree with me that no trouble, no care, no money is wasted, which is spent in teaching our men to make a proper use of electricity, which as a servant, has been aptly compared, for ability and docility, to the slave of the lamp, but which as a master, is always mysterious and sometimes terrible.

The CHAIRMAN: When Lieutenant Batten announced his intention of lecturing on "the application of electricity to naval purposes," I felt pretty sure that he would not be able to exhaust his subject nor to exhaust his knowledge in one hour; and I can tell you that as I have been reading the lecture whilst he has delivered it, that he has been obliged to omit many very interesting and important parts of it; there are also many experiments that he has been unable to give owing to the unfortunate accident which has happened to his assistant operator. We shall be very glad to hear any remarks which anyone present may wish to make upon this very interesting subject.

Admiral R. A. SCOTT: A remark was made by Admiral Arthur when I was last here to the effect that recent discoveries have been of great advantage to weak nations. I think they have been of especial advantage to our Colonies, which by the use of torpedoes and with the aid of the English Squadron (which we in New Zealand always gladly welcome) will be rendered practically safe. I think I may say, Sir, that you being present on occasions like this is of very great advantage, especially for the encouragement of young Officers, and inducing them to come forward with

their opinions. I am sure all who have heard this lecture must acknowledge that the information it has conveyed has been exceedingly valuable. I would ask the lecturer to tell us whether the electric circuit cannot be completed by the earth return when the mine is laid out at a distance of two or three miles from the shore, as a return cable for that distance would be an expensive thing. It is said that a plate of metal—say about 2 feet square—is required on the shore side in connection with the instrument. At any rate the earth circuit answers for a very considerable distance; but I should like to know whether it will do for great distances. We have had to-day practical illustration of the many advantages of the electric light. In passenger vessels it largely conduces to comfort, for it tends to keep the atmosphere cool as compared with old systems of lighting. With respect to the lecturer's observation as to laying down torpedoes to protect wide and narrow channels, I think there is no necessity to have a very large number of mines even in the former case, for the fact that mines are laid down would be a deterrent to vessels approaching. No man would risk his vessel (costing perhaps half a million) and all his crew by coming within a mile of a mine. I think therefore the mere laying down of mines would be a sufficient safeguard to most harbours. With respect to the numerous automatic appliances and devices for various purposes, I venture to think that nothing can supersede the look-out of the person. An automatic log is very good, but it *may* go wrong—and I have seen a great many automatic experiments fail—but the observation of the person does not fail, that is of one properly instructed; for instance, an Officer knows how many revolutions the engines of his ship are making, should also know the speed those revolutions are giving, and I believe any person who observes carefully is able to calculate accurately the distance the vessel runs, &c. I do not say that automatic appliances should not be used, but they should always be supplemented by the skill of the person—in observing the different points of departure as well as the distances run by the ship, and other things of the same kind. The lecturer did not state how near the electric current might pass without any disadvantage to the action of the compasses; but I may mention that in the "Kaikoura," in which I came home, Sir William Thomson's compass—the after one—was not of the slightest use; it kept spinning round, but the forward compasses (also Sir W. Thomson's) were perfectly steady. The compass itself, although an admirable one, yet under the circumstances of vibration does not appear to act correctly. As regards the value of torpedo-detectors I do not believe if the defenders are vigilant that the detectors can be used. I think the defenders must be asleep to allow their torpedoes to be found and lifted. In New Zealand, for instance, we have whale and other boats, tugs, &c., as well as a few torpedo-boats, that could always be moving, and would certainly prevent any torpedo mines from being taken up. The great thing we require is to have the defences of our Colonies perfectly worked out in full accordance with the opinions of the Admiralty, because it is naval attack Colonials have to guard against, and, therefore, any local defence to be efficient must necessarily be supplemented by the Imperial Squadron.

Rear-Admiral the Hon. E. FREMANTLE: We must all agree with what the Chairman has said, that this lecture is one of the greatest interest to the Naval Service, and also that it is a subject which it was scarcely possible to deal with at all satisfactorily to the lecturer in the space of one hour. I sympathized very much with him on that point, and I dare say it is probable that most of the questions which I now propose to ask would have been answered if he could have made his lecture a little longer. There are only two or three points on which I propose to dwell. One is the question of the electric light. We have all heard about the incandescent lights on board ship, and we all understand how extremely useful they must naturally be. But I do not wish to touch on that at present, I am speaking now of the arc light. I was extremely glad to hear the lecturer state that some arrangements were likely to be made enabling the carbons to approach each other automatically. All those who have had to deal with the electric search light on board ship must be aware that occasionally there is a splutter and a stop, that is when the man in charge is obliged to rearrange the carbons. It would be a very great advantage if that could be rectified. Then there is the question of keeping the light bearing on an object as it passes. I have recently fortunately had

the opportunity of conducting some experiments, in conjunction with the Officer in charge of the "Dreadnought." In accordance with orders we received, we tried the experiment of attacking the ship with torpedo-boats, and more especially the question of discovering the boats and keeping them in sight by the electric light. One of the greatest difficulties we experienced was after we had discovered the boat, in keeping the light upon it, and the reason for that has been mentioned by the lecturer. I only wish to confirm what he has stated, that the man who is moving the projector is partially blinded by the light, and cannot keep it on the boat approaching, while we below or above can see perfectly well; the result is, we call out to him to move the projector, and he perhaps pulls it a little too far, and so we lose the object. If, therefore, it could be so arranged that it could be directed by some person below the light we should find it of very much greater use. As regards my experience in finding boats with the electric light, I must say I think, on the whole, the use of the light is very valuable. We allowed the torpedo-boats to attack the ship while she was in darkness, and they had some difficulty naturally in finding us. At the same time, when we wished to put the electric light on them there was considerable delay, by which I mean some half a minute's delay, and a question of half a minute at such a moment is very valuable indeed. We found that the position of the light was of considerable importance, and that is a point to which attention has been directed by the Admiralty. I understand the Germans are in the habit of having the light aloft, and we were directed to try some experiments in that way. We found that when the electric light was put into the main top, although unquestionably we had a greater range, yet certainly the boat got under the ray of the light on several occasions, and on the whole, we were unanimously of the opinion that the nearer the light was to the water the better. I should like to have heard a little more about the torpedo-boats in which the motive power is electricity. The lecturer, through want of time—perhaps the experiments have not been sufficiently carried out—was not able to give us very much detail as to that question. One great thing which we discovered, referring again to these small experiments I have mentioned, was that we could always hear the torpedo-boat before we could see her. The picket boats could hear the torpedo-boat a long time before it could be seen. That points to the absolute necessity of having quietness in the torpedo-boat, and shows the great advantage of having one which could be moved by electricity, where we have only just the screw moving and the slight spray made by the boat and nothing else. On some occasions we were able to see the sparks from the funnel. Of course with an electric boat we shall not have the sparks from the funnel, therefore it will be a distinct advantage if we can use the electric boat for torpedo purposes. No doubt there are some disadvantages. As regards speed, I understand that some boats have been ordered and contracted for by the German Government which allow of 12 knots speed. 12 knots is a considerable speed, and a speed which, as far as I understand, has not hitherto been attained by electric boats: at the same time, we know perfectly well that our torpedo-boats are expected to go 21 knots. I should like to know from the lecturer whether he is of opinion that any speed like 20 knots may be expected to be obtained at some future day in these electric boats. Not only that, but it appears to me that there is some difficulty with reference to the number of revolutions of the screw. I understand that electricity acting directly from the motor will drive the screw some 400 or 500 revolutions, but that you have the distinct disadvantage of not being able to regulate the revolutions of the screw. In the electric boats which I have seen you have been unable to ease the speed, but you must go full speed ahead or astern. I would like to add one word to what fell from the lecturer with reference to the necessity, or the very great advantage, of being able to place the electric light somewhere else besides on board the ship herself. We know that foreign Powers have the electric light fitted in their steam launches, the Russian ships are so fitted, and a great many foreign Powers have many ships so fitted. It could very easily be done, and I am given to understand it has been contemplated by our Admiralty to place them in our boats. I certainly think, in agreement with the lecturer, that if we could land them in certain places, or place them in picket boats, they would be a very great advantage to us, and it would be very poor fun for an enemy who was going to

attack a ship to run ashore under the electric light, and instead of attacking the ship, to get stranded. In attacks made by torpedo-boats, the Officers in the boats speak very distinctly as to the extremely blinding effect of the light, and that when the light is kept shining upon them it is absolutely impossible for them to judge of the distance at all. The result was that they were liable to discharge their torpedoes at something like 1,000 instead of 400 yards, which was the object aimed at. I wish expressly, on my own part, to thank Lieutenant Batten for having come here to give us this lecture.

Admiral Boys: I should like to be permitted to ask one question with regard to a very important point, which I think has a great bearing on future torpedo warfare, namely, the propulsion of boats by electricity. I would first bring to notice one conspicuous object, not mentioned by Admiral Fremantle, always present with steamboats, which, from my experience, is the first thing discovered at night by the electric light, and that is the waste steam from the funnel. What I want to ask the lecturer with regard to the electric propulsion is, whether any improvement has been made since last year in the charging of the accumulators for the propulsion of the vessel. We were then told, I think in this theatre, that it took as long to charge the accumulators as the actual run of the boat; so that if you wanted a boat to run six, eight, or ten hours it took actually that number of hours to charge the accumulators, and consequently the boat was laid up for that time before the run could be repeated, which is a very material objection to the principle. I would ask whether that objection still exists, and if there is any prospect of its being removed.

Admiral Gore Jones: I think it is exceedingly satisfactory to us all to find that the torpedo question has made such little progress for a great number of years. It is to our advantage, no doubt, to do without them if we can, and when I was in America nothing gave me greater pleasure than to see a new torpedo tried, and to find that it was an utter failure. It is only experience that teaches us by slow degrees what an uncertain thing electricity is, and how little we really know about it, and how little we have been successful. I saw all the torpedoes in America tried, especially the Lay torpedo; everything was done that could possibly be done to make it a success, and it certainly ended in failure. The torpedo which, as a weapon of attack, we thought so much of at first, has never distinguished itself yet; whether it will eventually do so or not I do not know, but I hope not. I saw the Ericson torpedo tried, but it was a failure, and, in fact, I have not seen a single torpedo that has not failed in most attempts when it has been tried. I would remark on another thing—the unexpected always happens. Commander Matthews, at the head of the American torpedo school for a great many years, was surprised when he got into the Chinese rivers to find that his circuit did not act; it came to a dead stop. He had the usual metal plates and the water circuit, but he could not get it to act. Then he found out it was the mud in the river that caused this difference, and I recollect reading a very interesting report on that. The only thing perfectly successful in America, and also in the late Franco-Chinese War, was the spar torpedo, and it is the only thing I believe in still, because you have the intelligence of the Officers to work it. With the spar torpedo you know exactly what you have to do, and I have seen the most admirable experiments carried out. I have seen vessels of 200 tons blown up—a vessel going 8 or 10 knots, passing another vessel, putting her spar torpedo under it and blowing it up. I never saw an experiment like that with anything else, but that was done over and over again. I saw the whole of the American squadron in succession pass and use their spar torpedoes, in every instance successfully, but I never saw them successful with anything else. The fact is the spar torpedo is the only thing that brings the man's intelligence to bear, and the bravery of the men who have to do the work. As I say, notwithstanding all this apparatus and the number of years we have been working at this subject, we have no more certainty with regard to electricity at the present moment than we had six or eight years ago. I will point out another thing which occurred when I went out to America; there was nothing that was so firmly impressed on my mind by Captain Fisher, then the head of the torpedo establishment, as the necessity of splicing the cable in such a way as to make the insulation perfect—that a pin's point would destroy the effect of the current if it were in

water and was allowed to escape. Well, the first thing I saw when I got over to America was that they took up the ends of two parts of the cable, twisted the wires together, and pitched them into the water without any insulation, and it acted as well as ever. I could not make it out at all after all I had heard of the necessity of insulation. However, I thought over the circumstance, and I supposed that they were using a superior form of dynamo-electric machine to ours, but this was not so, as two of our machines were superior in power. I think we certainly ought to push more ahead in our experiments than we do, and not allow any other nation to beat us with superior instruments to our own.

Lieutenant CHISHOLM BATTEN: Admiral Scott asked whether there might not be a saving of wire by using the earth current for a mine at a distance. That is quite so, and it is always done in practice; in fact, on that drawing the complete wire circuit was merely put in to make it simpler. There has been a controversy, not in the matter of long distances but in the matter of short distances, such as firing guns and using lights on a ship, as to whether it is advisable to use a wire or an earth circuit. As there was not time to enter into all that controversy, I thought it better to have complete wire circuits. In telegraphs and firing mines at a distance an earth return is always used to save wire. With reference to the deflection of the compasses, I think I am right in saying if a wire is 30 feet from a compass the compass is perfectly safe. The torpedo detector is not a machine for removing the torpedo, but for showing its presence. It is made on the same principle as that little thing which was used to show the position of the bullet when President Garfield was shot. It is dragged along the bottom of the water, and there is an increased noise from the telephone when it approaches any metal substance. The picking up of torpedoes is a thing outside the lecture. I am afraid I was slightly misunderstood about the automatic lamp. I did not say that they were actually being introduced for search lights, but that I thought it was time they were introduced. Automatic lamps are used for very long periods on shore without requiring any attention, but the old argument in favour of using the hand lamp was that as the man had to be there to direct the ray of light he might as well attend to the lamp as well. What we want to get is that the man who directs the light shall be away from the lamp, and therefore he cannot attend to the carbons, and it is no use putting another man up there for that purpose.

Admiral FREMANTLE: Are automatic arrangements being introduced?

Lieutenant BATTEN: No, Sir, not into the Service. With respect to running boats by electricity, the boat I mentioned was a 25 feet boat, and they got 7 or 8 knots out of her. I do not think any experiment has been made with a much larger boat, but no doubt with a larger boat a very much larger number of cells could be carried, and a very much higher speed obtained. There is no reason why a boat driven by electricity should not be slowed; it is very simple to arrange that. As to the question of the charging of the accumulators detaining the boat for a long while in a useless condition, it is quite true that it takes a long time to charge the accumulators for driving a boat, but the accumulators need not be fixed in the boat—it is only necessary to have two or more sets of accumulators, and the boat can then come alongside and get in her charge of accumulators the same as she has to get in coal. No doubt it takes as long to charge the set as it does to run the boat. With regard to the insulation, I think there used to be an arrangement for firing an outrigger torpedo with a bare wire twisted in two different lays of the rope, the two ends being kept apart by a bit of stick. Of course, it is very easy to fire with bare wire if you have a proper battery.

Admiral FREMANTLE: They used rather a weak battery.

Admiral GORE JONES: It was better than the two others we had in use at the time.

Lieutenant BATTEN: It is perfectly easy to fire a torpedo with a bare wire, but there is a certain amount of loss, and in order to fire it in the best way, it is better to insulate the junction.

The CHAIRMAN: I am sure I need not press you to allow me to return your thanks to Lieutenant Batten for his interesting lecture and for the opportunity he has given us all of thinking over this important subject. I will offer a very few remarks on what we have heard from him. After telling us of the great advantages of illumi-

nating a ship by electricity—which are certainly fully as great as he has pointed out—the safety from fire, and the perfect light given—especially in the engine-room and gun batteries, he pointed out that there was a danger of the whole of the lights in the "Etruria," or any of these large ships, being extinguished by one accident to the dynamo or engine. I think I am right in saying that in the "Etruria" they have five sets of dynamos and five sets of engines, so that it would require a very unusual combination of accidents to put her in darkness. This safeguard of a multiplicity of dynamos is absolutely necessary when lighting a ship by electricity. One application of electricity to naval purposes which is much wanted is a simple electric log. In those fast Atlantic steamers that steam at the rate of 18 or 19 knots, the only means they have of ascertaining their speed is by heaving the old log that we were brought up with fifty years ago. They use the old ship log, throwing it every two hours. They have a hand reel for hauling it in; but that is the only log they depend upon at the present moment. No doubt there is nothing like trusting to the skill of the Officers and men using it, but I still believe in mechanical assistance and scientific assistance, and I should be very glad to see scientific knowledge applied to give us the speed of the ship at any moment. It is a matter of very great importance. I cannot allow Admiral Scott's statement, that Sir William Thomson's compass will not stand vibration, to pass unnoticed. We have tried it in every possible way, and we find that it will stand vibration better than any compass we have, excepting the vibration of a torpedo-boat, and in a torpedo-boat no doubt the liquid compass is the steadiest compass you can use. I do not wish to let it go forward to the world that Sir William Thomson's compass is not steady under the ordinary vibration of a ship. I think it is the best compass we have, and one to be relied upon in all circumstances on board ship.

Admiral SCOTT: There were two or three of those compasses. It was the after compass I spoke of where there was vibration. I did not speak of them generally, only where there was great vibration.

Admiral GORE JONES: His sounding machine is not alluded to, but it is the most perfect thing in the world.

The CHAIRMAN: I wished generally to give my experience and that of the Service for the compass. There was one remark the lecturer made that I think we should all take to heart—young Officers, and I might say old Officers as well—which is this, that the boat with the electric propulsion does not require skilled men to work it; that a seaman who can steer a boat, and do as he is told, will work that boat with its machinery with perfect ease. I have no doubt that a great many Officers, both young and old, have an idea that it requires very high scientific attainments to control the machinery for using electricity on board ship. No doubt the apparatus on this table would frighten many, but the fact is, although it does require high scientific attainments to elaborate and to apply electricity to all those operations of which we have heard to-day, yet most of them are actually manipulated and used without any scientific knowledge at all. Three-fourths of the work of the Service has always been done and always will be done (electricity notwithstanding) by the working, practical men of the Service, and they need not be afraid that they will be unable to do their work as well as it always has been done because it requires such a great amount of scientific knowledge to invent and arrange the apparatus to be used by electrical means. I am afraid that some of them are needlessly alarmed by the idea that a large amount of scientific information and preliminary education is required to work that apparatus; but such is not the case; much no doubt is needed by those who, like the lecturer, are capable of thoroughly understanding its installation and of proposing means for improving it. I am sure you will authorize me to return your thanks to Lieutenant Batten for his interesting lecture. I only wish it had been divided into two lectures instead of one.

NAMES OF MEMBERS who joined the Institution between the 1st January and the 30th June, 1885.

LIFE MEMBERS.

Newton, J. W. M., Capt. R.A.
Inglefield, E. F., Lieut. R.N.
Lowe, F. M., Lieut. R.A.
Stopford, F. G., Lieut. R.N.
Wardrop, F. M., Major 3rd Drag. Gds.
Marriott, R. C. S., Lt. D. of Corn. L.I.
Besant, W. H., Lieut. Norf. Regt.
Murray-Aynsley, W. F., Mid. R.N.
Shrubb, H. A. B., Mid. R.N.
Heyworth, G. F., Major late 3rd Bn. Welsh Regt.
Boyle, A. G., Lieut. 4th Bn. Som. L.I.
Collings, W. A., Major Berks Regt.
Malcolm, H. H. L., Lieut. Cam. Highrs.

ANNUAL SUBSCRIBERS.

Wright, P. H., Lieut. R.N.
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Taylor, E., Major 1st Herts R.V.
Walker, W. F. D., Lieut. R.N.
Napier, Hon. J. S., Major Gord. Highrs.
Shenstone, F. S., Major late Worc. Yeo.
Gleadow, E. S., Lieut. 4th Drag. Gds.
Greenwood, J., Capt. 2nd Middx. Art. Vols.
Johnston, J. G., Capt. late R.E.
Church, H. F., Lt.-Col. Com. 3rd Middx. R.V.
Taylor, St. J. S., Major late 11th Hus.
Mercer, A., Lieut. Edinb. Art. Mil.
Scott, W., Lieut. Edinb. Art. Mil.
Phillips, W. C., Maj.-Gen. late Mad. S.C.
Hall, F. H., Capt. R.A.
Prowse, G. W. T., Lt. D. of Corn. L.I.
Hamilton, W. A. B., Maj. E. Loth. Yeo.
McDonald, J., Lieut. E. Loth. Yeo.
Head, H. S., Lieut. 4th Bn. Worc. Rt.
Maybery, H. O. A., Capt. Breck. R.V.
Pierson, J. E., Capt. Royal Sussex Regt.
Sandbach, W., Lieut. Royal Fus.
Douglas, R. G., Rear-Admiral.
Newcome, H. G., Major R.A.
De Jersey, W. G., Capt. R.A.
Gregorie, D. G., Lieut. Royal I. Regt.
Wodehouse, K. R. B., Major Wilts Rt.
Hudleston, E., Lieut. R.A.
Snell, W. C. H., Lieut. R.N.
Ruggles-Brise, H. G., Lieut. Gren. Gds.
Pullen-Burry, H. B., Lt. 1st Herts R.V.

OCCASIONAL PAPERS.

This portion of the Number is reserved for Articles, either Original or Compiled, on Professional Subjects connected with Foreign Naval and Military matters; also for Notices of Professional Books, either Foreign or English.

It is requested that communications or books for review may be addressed to Colonel Lonsdale Hale, at the Royal United Service Institution, Whitehall Yard, London, S.W.

SOME GERMAN VIEWS UPON THE TRAINING OF INFANTRY IN PEACE AND ITS ACTION IN WAR.

"Militärische Briefe II. Ueber Infanterie." Von KRAFT PRINZ ZU HOHENLOHE-INGELFINGEN, General der Infanterie à la suite der Armee, General-Adjutant Seiner Majestät des Kaisers und Königs (Berlin, 1884).

"Beiheft zum Militär Wochenblatt, 1884." Heft 6. Herausgegeben von V. LÖBELL, Oberst. z. D. (Die Heranbildung v. Unterführern auf dem Exercirplatz) (The training of leaders of the lower grades on the field of exercise).

TWICE during her short history as a kingdom has Prussia established her superiority in war; the first time under Frederick the Great, the second time under Frederick William and v. Moltke. On each occasion her army has become the pattern for all European armies, and her annual fields of manœuvre the meeting ground for students of the art of war. Her first period of military supremacy was but of short duration, principally owing to political causes, but also to a falling off from the high standard of warlike efficiency which had been attained, a decline which had commenced even before the death of the great warrior-statesman whose genius had raised his little kingdom to one of the foremost places among nations, a decline so rapid that within twenty years of Frederick's death the army which he had made a model one, imitated, and sometimes only too blindly, by other nations, entirely broke up and collapsed under the blows of a younger and more vigorous organization. As far as the military question goes the reasons for this rapid decay of Prussia's fighting power are not far to seek. They are to be found mainly in the torpor which is too often with nations as with individuals the natural consequence of great success, in the idea that the system which has succeeded so well must be perfect and must always succeed, that in fact it is only necessary "to let well alone," as the saying is. You may slumber in peace. Unfortunately for the slumberers the world does not stand still, and while they are taking their rest changes unnoticed or unappreciated by them are constantly being made, till all of a sudden they are rudely awakened to the consciousness of a new order of things for which they with their old-world notions are utterly unprepared,

and so they and those who have been guided by them give way before men and nations who have kept awake. Situated as Prussia is geographically and politically, military decline must inevitably in a very short time produce a national catastrophe. Such was the case in 1806. The lesson was not lost upon the nation or its rulers. The painful reawakening of Jena led eventually through some years of suffering and humiliation to renewed life, and the warlike spirit, thoroughly aroused by the struggle for independence, has never since ceased to animate more or less the Prussian people, notwithstanding a long period of peace, though had it not been for the fine example set by the present Sovereign and his family, for the genius, energy, and persistency displayed by the statesmen and soldiers at the head of the government and of the armies, this spirit could not have produced the mighty results which we in these latter days have witnessed. Again, for the second time in her history, has Prussia overcome every army which has met hers in the field, and, again, has her army, and this time through its teaching that of United Germany, become the best sample of warlike efficiency which the world can produce. During this second period of preponderance her success has been far more rapid, complete, and continuous, also on a much greater scale than during the former period. There would consequently appear to be more justification for allowing a course of placid repose to follow upon one of tremendous exertion, but no such feeling has arisen, or if there be some few among the older Officers for whom age and weariness make a quiet life the one thing to be desired, their number and influence are not great enough to affect the general result, so that instead of the torpor succeeding Frederick's successes, we find after v. Moltke's much greater victories constant unremitting exertion and a never-ending struggle for improvement throughout the ranks of the army. Not a shot has been fired by it on an enemy since the spring of 1871; consequently a period of peace has elapsed about equal to that which intervened between Frederick's last war in 1779 and the invasion of France by the Duke of Brunswick in 1792; but whereas after Frederick's wars military knowledge remained at a standstill, while military spirit and efficiency degenerated, during the present peace, on the contrary, military spirit remains as strong as ever, while military knowledge and efficiency have largely increased. As far as can be seen, there is every prospect of a continuation of this reign of progress, for it has become the prevailing fashion of the army not to accept any part of its institutions as perfect, and to be constantly aiming at improvement. The saying "Nothing is so successful as success" does not apply to the estimate formed by the German Army of itself. It was successful in three successive wars within a period of only seven years, in the latter two of which wars success was on a scale hitherto unprecedented; yet after each of these wars, particularly after the last and greatest, there has been a general inquiry "How can we do better next time?" Hundreds of busy heads are continually occupied in originating or carrying out improvements in administration, in armament, in equipment, in organization, in tactics, in short, in everything which conduces to efficiency in *war*. No invention of these inventive days which can in any manner be useful in warfare passes unheeded, even such a matter as the rearing and training of carrier pigeons being carefully studied. An enormous amount of new military literature appears annually, Officers of all ranks contributing to it, and being thought the better of by those in authority for doing so. Many of these writers enjoy a world-wide reputation, their works being known and appreciated everywhere. Amongst the latest who has come into the lists as an author is one of the highest placed Officers in the German Army, one who has held important commands on service during the late wars, and also during the subsequent time of peace. He is thus amongst those best qualified both by war and peace experience to give his opinion on military subjects. I speak

of Kraft Prinz zu Hohenlohe-Ingelfingen, who has within the last twelve-month published a series of letters on the three arms, cavalry, infantry, and artillery, a little volume devoted to each having appeared in the order above given. The author, so well known as an artillery Officer, commanded the "reserve" artillery of the Guard Corps during the campaign of 1866, being wounded at the battle of Königgrätz, and the whole artillery of the same army corps in 1870–71, playing an important part both in the battle of the 18th August at St. Privat, and in that of the 1st September at Sedan. Though not in command of either infantry or cavalry on service, he had ample opportunities of watching the action of those arms in battle, particularly of the former, and after the peace commanded for seven years an "infantry Division," which contains in the German service, as we know, detachments of the other arms also. Prince Hohenlohe's experience during his thirty-five years' service has been thus of a sufficiently varied character to qualify him as an authority on the subjects of which he treats, and I think that all those who read the letters will be struck by the breadth of view and earnestness which he displays. It is evident from his writings that he is a man of judgment and of observation, moreover of an ingenious and inventive turn of mind, and endowed with the true spirit of a soldier, whilst his record of service proves him to have been a cool-headed and able commander. The description of the scenes in which he took part, or of which he was an eye-witness, are graphic and picturesque, bearing at the same time the impress of reality and accuracy.

In the introduction to the first volume of the series, he gives his reasons for publishing his opinions and experiences in the form of letters. He states that having been often asked to give the army the benefit of his views upon professional matters, he was doubtful as to the form which the publication should assume, at first thinking of bringing out a book of memoirs, but rejected this idea because memoirs, or, in other words, the account of what a man sees and hears, differ very much in moments of excitement from what actually occurs, each man's views being coloured by his own immediate environment, consequently personal memoirs are sure to promote controversy and disagreement, things which it is well to avoid. Then the idea of a scientific work on the tactics of the three arms occurred to him, but this also was rejected, for, as he says, "there are so many and such excellent works of this nature. I could only repeat what has long been known, and has been repeated over and over again." He ended by presenting his ideas to his comrades in the form of letters written in a familiar, gossiping style, and I do not think that his decision is to be regretted. It will be found, as may naturally be expected, when we consider the intimate connection between the different arms in war, that the action of all the arms is frequently referred to in each volume, for as all must work in combination, it would be impossible to treat the subject in a fitting manner if attention were exclusively given to the one arm at the moment under consideration. My own remarks will be confined to the second volume of Prince Hohenlohe's letters, from which I shall give as copious selections as my space will allow, concluding with an extract from the "Militär Wochenblatt," the views advocated in which in a very clear and practical manner are, as will be seen, in complete accordance with certain opinions held by the Prince. The passages which I have selected from his letters on "Infantry" appear to me such as specially require our attention, but I recommend a careful study of the three volumes, of which a complete translation would be desirable.

The first letter begins with the following striking passage: "After reviewing the performances of German infantry in the war of 1870–71, one comes to the conclusion that it is not only the most perfect force of that arm which has ever existed, but that no more perfect infantry can be imagined. It is

true that the Emperor Napoleon remarked after the catastrophe of Sedan that German victories were due to the Prussian Uhlan and to the Prussian artillery. Bazaine makes a similar statement in his 'episodes.' It was doubtless owing to our cavalry that our adversary was blindfold, and that our armies had complete freedom of action: doubtless also German artillery had often to take a very active part in the work which properly belonged to infantry when the range was too long for the needle-gun to reply to the Chassepôt, but after all it was always the infantry which had to do the main part of the work.

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"Nothing would have been more natural than that our infantry should have believed itself to have attained the acme of perfection, and that it should hold fast to every detail of its institutions, but no: we have been surprised, on the contrary, to remark that a general desire for improvement prevailed throughout its ranks."

This desire has been maintained ever since, and is still maintained, not only in the infantry but throughout the army, as before remarked. With regard to the principal arm, it is well to bear in mind that great tactical changes were contemplated before the French war, and that a new edition of the Field Exercise was actually published in the first half of 1870. Its adoption was, however, wisely deferred, and after the war so much consideration was required, owing to the experience gained during its progress, that the result was only made known to the army in 1876, when the edition now in force was issued. The tactical changes introduced are discussed here and there throughout the letters now before us, and are generally approved of, the great merit and salient point of the present regulations being that while extreme steadiness and precision of movement, complete adherence to established forms, are insisted upon at drill and when manœuvring in close order, very great discretion is allowed in the so-called "battle exercises" and in their counterpart, actual battle. The author's criticisms are chiefly confined to the manner in which the spirit of the regulations is understood and acted upon, and here he has a great deal to say. The first few letters are devoted to the individual drills and instruction of the soldier, which, as the writer points out, cannot be too careful in these days when such a variety of knowledge is required, and when so much depends upon individual proficiency. I have made no extracts from the letters in question, because, though full of good hints, the system described in them appears not to differ materially from that in operation at home. It is, however, and this is an important point, worked out in a more steadily progressive and systematic manner than with us. Then we come to company drill, looked upon with justice by the Germans as a matter of paramount importance, not only for training but also for discipline.

It is within the limits of the company that, as Prince Hohenlohe phrases it, the soldier learns the "how," that is to say the details of execution of the "what" afterwards practised at battalion exercises, and later on applied to the requirements of the battle-field. It is in the company principally that he learns the duty of obedience, and that he gains that confidence in, and respect for, those in authority over him, without which true discipline cannot exist. The chapter upon the company Officer is excellent and instructive. We now arrive at battalion training and inspections. The manner in which these matters are conducted by Commanding Officers and Inspecting Generals is severely criticized, and it is somewhat surprising to find how much "unrealities" are in vogue even under the very practical military system of Germany.

Prince Hohenlohe does well in drawing attention to the fact that the prevailing style of inspection virtually regulates the manner in which troops

are trained, for given good material you can work it into any shape required. It is for the heads of the army to choose the right shape. The importance of developing individual initiative in subordinates is strongly insisted upon, and this can be accomplished to a great extent by a judicious system of training; but if Officers are not accustomed to think and act for themselves upon occasion in peace time, they must learn to do so on service, and often do not acquire the habit soon enough for themselves and for their country. It may be considered superfluous now-a-days to preach the necessity of fighting in extended order, using the term in a large sense, not only as applied to the individuals composing a tactical unit, but also to those units in relation to one another; yet such exhortations are evidently required even in Germany, where the principle of extended order has long been firmly established. How much more so with us, seeing that the form of tactics supposed to be the most suitable to modern requirements, and practised accordingly by our soldiers in peace time, has to be so often departed from in the wars which one part or other of our Army is almost always waging under conditions which render it necessary to return in greater or less degree to tactics considered obsolete in civilized warfare. Consequently, I think that no occasion should be lost of reminding ourselves that, necessary as formations in close order may often be when encountering foes such as Zulus, Afghans, or Soudanese, to meet a civilized army in such a manner would be to court disaster. The author's remarks upon this subject are well illustrated by battle pictures drawn from his own experience. In the same manner he adds force to his views upon flank and frontal attacks, upon the action of infantry against and combined with cavalry, and upon the supply of ammunition to troops in action, one of the most difficult problems to solve, and one which v. Moltke is reported to have pronounced insoluble, meaning probably when engaged at close quarters. The author's suggestions to infantry upon this point are practical, and will be found further on. The eleventh letter treats of the attack of a position by infantry supported by artillery across perfectly open ground, the most difficult operation which infantry can in these days be fairly called upon to perform, and one for which a great many recipes have been invented in all countries since the breech-loader was introduced. The author gives a very good picture of such an attack which, if conducted properly, is, however difficult, far from impossible, as we know from the history of the last European wars. The chapter on fire-discipline is well worthy of study by Officers of all armies, not excepting our own, which is far from being as superior to all other armies in that material point as it used to be in the days of the smooth-bore musket. The reason of this is, I think, not far to seek. I do not believe it to arise from any deterioration in the physical and moral qualities which contribute to "steadiness" in the soldier, but from the want. till quite of late years, of the most practical part of training in the use of the rifle, what we call "field firing," and the Germans call "battle shooting." They and other foreign nations have carried it on systematically for some years. We have only taken to it recently, and I believe that even now we do not put the men through a preparatory course of *individual field firing* as do our Continental friends. The next letters, portions of which are included in the following extracts, treat of the training of the regiment and of the brigade. The concluding letter, that on the "Geist der Infanterie"—the spirit of infantry—that true soldier-like spirit which maintains firm discipline throughout the most rigorous hardships in moments of excessive peril and impending disaster, throughout periods of depression when mere excitement, enthusiasm ("Begeisterung"), so animating at the commencement of a popular war, has faded away, or, at any rate, is not sufficient to make men bear up against hard times. The Prince says, "The spirit of our troops manifested itself in the fact that they never considered themselves beaten." Napoleon I said

something of the same sort of our infantry. I think that recent events have shown the saying to be as true now as it was then, and that in the matter of "Geist" at least we have no occasion to envy the Germans.

The supplement to the "Militär Wochenblatt" contains four examples of tactical exercises, of which I give the first two, which appear to me good specimens of what such exercises should be, being very simple and instructive. The critique at the end of each is specially worthy of study. The other two exercises are more complicated, and in some ways more interesting. The little book forms an excellent sequel to Prince Hohenlohe's letters, as the writer, whoever he may be, enters fully into the Prince's views as to tactical training and attempts to carry them out in practice.

Selections from "Militärische Briefe."

Individual Action and Extended Order in Battle.

When we examine the further development of our infantry training we perceive that, both in the movements of the soldier individually and in combination with others, both in rifle drill and in the practical use of the weapon, the same care is taken to make each man a reliable independent agent as we noticed when treating of the elementary instruction of the recruit.

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As soon as each man has learnt to march well, that is to say, naturally, freely, with confidence, without constraint and with upright, manly bearing; as soon as small squads with three paces interval between the men can march on a point keeping a good alignment and can make good wheels, there will be but little trouble in mastering company drill. How well the proficiency attained by the individual soldier repays you for the trouble expended upon his training.

In this we find one of the many reasons for the excellence and superiority of our infantry, for we cannot doubt that the careful training of the soldier to act for himself in battle, and yet to pay every attention to the orders of his leaders, contributed greatly to our late successes. Whenever this excellence of individual training was taken full advantage of our infantry was very successful with comparatively little loss, whereas whenever the commander acted upon the opposite principle our casualties were so numerous that not only was success endangered, but defeat would most surely have resulted had he not quickly reverted to action in extended order. In my first letter I referred to a certain combat as evidence of the small loss incurred by regiments attacking in skirmishing order as compared with the fate of those obliged to attack in company column.[1] Allow me now to describe an incident in the battle of Sedan, of which I was myself an eye-witness. We were in position on the east of and fronting towards the deep valley of Givonne, containing the village of the same name, which was occupied by rifle and fusilier battalions of the Prussian Guard. It was about 1 P.M. The enemy's infantry had abandoned the opposite face of the Givonne

[1] See page 5 of "Ueber Infanterie." In an attack on a village during the latter part of the war, two regiments took the portion of the outskirts told off to them almost without loss, two other regiments on the same occasion suffering severely. The reason of this was that they were commanded by Officers who having been wounded at St. Privat had only rejoined their regiments the day before the fight in question, and had not yet practised the new form of attack. They led their men on in the old fashion, in company columns, and exposed them to fearful loss. Both these gallant Officers met their death on this occasion.—TR.

valley, retiring up to the Bois de la Garonne, situated on higher ground. Certain companies of our infantry had taken advantage of this circumstance to establish themselves on the further side of the valley. Thus, a company of the rifles (Jäger) of the Guard advanced from Givonne right in front of my line of artillery, whilst in front of its left flank two companies of the Franz Regiment, under Captain v. C——, moved forward from Haybes and extended in a single thin line of skirmishers along the brow of the opposite hill side. The enemy's artillery fire was almost silenced. Suddenly a dense mass of French infantry emerged to the south of the Bois de la Garonne from the depression which runs from that wood into the Fond de Givonne, rushing at full speed straight on Haybes, a movement which could not fail to bring it into collision with the two companies of the Franz Regiment. At the moment I estimated this mass of men at from 5,000 to 6,000, and I still think that my calculation was not far out, for it appears from the French accounts to have been the Grand Champs Division forming the left wing of the force with which Wimpffen made his desperate attempt to break through our line. These masses of men formed in deep columns, rushed on firing incessantly as they ran, with rifle held horizontally to the hip, thus enveloping themselves in clouds of smoke. I could see distinctly with my telescope how the men ran along, loading and firing, without raising their rifles to the shoulder, but all that was visible to the naked eye was an enormous lump rolling forward, the upper part of which was blue (from the coats) with a broad whitish grey band below (smoke), and below this again the red of the trowsers glittering on the quivering legs. I immediately directed the whole of the batteries constituting my line of ninety guns to open a rapid fire upon this column, still I could not but feel anxious for the two companies of the Franz Regiment pushed forward across the valley, because should the enemy succeed in getting within 200 yards of our people my guns would no longer be able to fire upon the head of the attacking column for fear of hitting our friends. And in fact, though our shells fell and burst amidst the dense throng, causing fearful havoc and producing to the eye the effect of a tangled skein made up of smoke and dust, of various coloured clothes with human limbs and bodies hurled into the air, yet the confused mass kept rolling on and drew nearer and nearer, for the enemy was inspired with the courage of despair. The time soon came when I was obliged to forbid further firing on the head of the column, and then we saw the front ranks of the assailants detach themselves from the crowd and rush upon our two companies. The contrast which our men presented to their foes was striking. Instead of the thick cloud created by the heavy fire of the Frenchmen I could, with the aid of my telescope, only make out a puff of smoke here and there along the Prussian line of skirmishers, who lay flat on the ground with rifle at the shoulder and taking steady aim.

Captain v. C—— alone could be seen moving along the line, looking as smart as we remembered him of old in a ball-room. He was cautioning his men (as we afterwards heard) to aim steadily and to fire slowly. Every shot laid an assailant low; the number of those approaching the Prussian line got smaller and smaller, a few actually closed with our men, meeting death at the very muzzles of their rifles; two of our skirmishers were even bayonetted in the back from above as they lay, but the attack, through conducted with great determination, entirely collapsed, and the few survivors took to flight pursued by the deadly bullets of our riflemen. The entire mass was broken up in ten minutes. On the other hand, the total loss of the Kaiser-Franz Regiment at Sedan was only 2 officers and 80 men,[1] of which loss only a small

[1] In Dr. Engel's Official Report of losses of the German Army, the total number of casualties in the "Kaiser-Franz" Regiment at Sedan is put at only 67.—Tr.

fraction can have fallen to the lot of the two companies in question. So great is the superiority of a well-aimed and well-directed independent fire from a body of soldiers individually well-trained over the "shock tactics" of dense masses.

The war of 1866 had already borne evidence to this truth through the annihilation of the gallant Austrian columns of attack, but at that time the success of our infantry was attributed more to the superiority of its breech-loaders than to its battle tactics, for in that war our infantry often fought in close order. In the case just described, however, it was the troops with by far the better firearm who adhered to formations in mass, and who did nothing against their worse-armed enemies, notwithstanding their great numerical superiority—6,000 to 300! and even though the gallant 300 were supported by such a tremendous artillery fire that we may assume half the French column to have been destroyed by it, the proportion of assailants to defenders was only thereby reduced to 3,000 *v.* 300; 10 *v.* 1.[1]

We may assume that the superiority thus existing of the independent fire of skirmishers on the defensive against the charge of masses must now be still more striking, in consequence of the subsequent improvement in small-arms. We can well understand how painful it must be for leaders grown worn and grey in the Service to relinquish such familiar and well-loved battle pictures as presented by the formations of Frederick the Great, who in person led to the assault battalions in close order with colours flying and bands playing, halting them to fire a volley at 100 paces from the enemy; but such formations can now no longer be dreamt of in these days of "Gras and Mauser." Even that fine picture of the brigade of six battalions, of which three are deployed in front line and fire volleys, the others thereupon passing through the intervals to charge with the bayonet, is no longer in keeping with the times. New inventions produce changes, and pictures which have been dear to our imaginations "melt into thin air." We must reconcile ourselves to this. The dearly-loved battle tactics of the mediæval chivalry had long ago to be given up, and with them the ideas of rivalling an Arnold of Winkelried, and of deciding the fate of battles by gathering the enemy's spears into your breast, thus making a breach in the hostile ranks. And in like manner we also must make up our minds that the magic influence exerted in former days by the measured tramp of the advancing column to beat of drum is now dispelled, and indeed tells the other way, as the fate of such a column would now be annihilation. On that account indeed the expression "column of attack" has been expunged from the last edition of our Field Exercise Book, giving place to the form "double column" (*Kolonne nach der Mitte*), a proof that the use of the old battalion column of attack under close fire is completely abandoned; and even the employment of the company column is very much curtailed. Nine times out of ten it will merely act as reserve to the fighting line, and only quite exceptionally will it be able to march up to the front in close order at the decisive moment. On the few occasions when this is feasible the movement will certainly produce great effect. For instance, at night, when darkness diminishes the effect of arms of precision; again, when smoke, or the physical and moral influence of severe losses clouds the defender's vision, or when the nature of the ground is such as to afford cover to the advancing

[1] The Prince, who was commanding the artillery of the Guard Corps, perhaps hardly makes sufficient allowance for the effect produced by the fire of his batteries on the French masses. Probably the moral as well as the physical effect of this fire had more to do with the discomfiture of the Grand Champs Division than the resistance, brave and skilful as it was, of the Prussian skirmishers.

Wimpffen in his book on Sedan gives no details of this affair.—Tr.

column. The individual action of skirmishers in the firing-line will, however, be on all occasions the most important part of the infantry soldier's fighting, and the army which learns best how to train each individual foot soldier to make the most of his firearm, and at the same time to act upon the signs, the orders, and the example of his leaders, will gain a decided preponderance in war.

For of what use is action, however vigorous, unless directed with good judgment upon the decisive point? In this consists the difficulty of military training. The men must be accustomed, though fighting in extended order, to obey the commands of their Officers and to maintain perfect discipline. This combination of discipline (steadiness) with individual initiative was the great secret of the superiority of our infantry in 1870–71, and will surely give the preponderance to any infantry over another inferior to it in that respect. This fact has been recognized by our authorities, and is the motive for all the alterations to be found in the Infantry Field Exercise Book of 1876. Not only, as already noticed, has the old "column of attack" disappeared as a battalion formation without leaving a trace behind it, giving way to the "column on the centre" (double column), which again is only employed as a formation for assembly out of fire,[1] but it is worthy of remark that in Chapter XIV the formation in two ranks (company columns) is established as the normal fighting formation, and that the greatest part of the book is devoted to fighting in extended order. The alterations thus made prove that those at the head of our Army gathered from the experience of the last war, successful as it was, the necessity for tactical improvements, thereby admitting the previous existence of imperfections. This admission entails no shame on those who made it, but is on the contrary highly creditable to them.[2] In fact, if we trace the course of the combats during 1870–71, in all their details, we cannot fail to be convinced that whenever any portion of our infantry met the enemy for the first time they exposed themselves to fire in columns, which were too large and too deep, and that this was one of the principal causes of the severe losses experienced in the earlier actions. I myself can only speak as a spectator, and that a distant one, of the part played by the Guard Corps in the battle of the 18th August, for I was in the centre of the line of artillery,[3] that is to say, a good deal to the right of where the chief infantry attack took place. I need tell you no more about the way in which the infantry of the Guard attacked St. Privat, for you have read and heard enough about it, and you are well aware that the losses experienced by the corps on that occasion gave rise more than anything else to the many suggestions and experiments made with a view to devising some tactical formation calculated to prevent the recurrence of such fearful havoc in the case of a similar offensive movement over an open plain. One thing deserves notice as evidence of the destructive nature of the fire from St. Privat. A flock of sheep took flight, broke out of the village of Ste. Marie, and galloped along the front of the Prussian infantry, creating a great dust, owing to which it was probably mistaken by the French riflemen for a body of cavalry, and

[1] The double column of "company columns," *i.e.*, of "züge" formed in two ranks, is the normal rendezvous formation for infantry when prepared for action (see last edition of "Exercir-Reglement für die Infanterie," March 1st, 1876, page 113).—Tr.

Our old double column of half-companies was equally handy.

[2] The conduct first of the Prussian Army, afterwards of the German Army, in constantly seeking to surpass itself, is one of the most noteworthy points in the military history of the nation. Most armies after such unparalleled successes would have gone to sleep and rusted on their laurels.—Tr.

[3] The artillery of the Guard Corps commanded by the Prince.—Tr.

perished under their fire to the last sheep (a godsend to our guardsmen, who all dined on mutton the next day). There are situations in battle in which men's minds are so occupied by the dangers of the moment that all evolutions become impossible; in such cases you don't know right from left; the only thought is "forwards" or "backwards."

When our men on the day in question came all at once under full force of the enemy's fire, of which they had hitherto thought but little, the only thing dreamt of was to continue the forward movement; recognizing the necessity of this, all the battalion commanders and their Officers merely shouted "Forward," "Have at them"; and so it came that those very "shock tactics" which four years before had failed before our fire were to all appearance to be tried by us in our turn.

But out of this attack of masses action in extended order soon developed itself, for the fearful gaps made by the enemy's bullets soon loosened our serried ranks, converting the companies into an open line of groups (*Schwärme*), which, honour be to the gallant fellows, kept moving on till near enough to the enemy's position to be able to reply to his fire.

They then were ordered to lie down, taking cover as well as they could in the furrows, and to keep up as hot a fire as possible, thus with the support of our advancing batteries preparing the way for the final assault, which was necessarily postponed till the left wing of the XIIth Army Corps was able to act upon the flank of the defenders.

The Company.

You have entirely misunderstood me if you have gathered from the wish which I expressed for some alteration in our drill regulations that I desire to reduce in the least degree our steadiness and precision. On the contrary, whilst wishing to see such details as practice in turning, in the rifle exercise, and such-like, discontinued as a part of battalion drill, I meant to insist all the more upon such elementary branches of instruction being taught most thoroughly and exactly at company drill. And at the same time I recommended that these details should be limited to what is absolutely necessary, so that each point should receive all the more attention, and that drill should be conducted under the closest supervision; in short, my desire is that elementary tactical instruction should be completed in the company instead of being carried on, as now, in the battalion. For the mode of fighting rendered necessary in these days by the perfection of firearms has made it incumbent upon us to operate with companies instead of with battalions, as every action portrayed in our General Staff history of the late war demonstrates. Hence the company has become the real tactical unit, although, for the sake of convenience and control, we still reckon by battalions, because the company has not lasting power enough for any length of time, and may easily be used up in action. We must thus pay the most careful attention to the training of the company in all details, whilst in dealing with the battalion we go beyond the elements, and enter more or less into the domain of applied tactics. I have, therefore, always tried, as far as possible, to confine the attentions of the company to the "how" rather than to the "what," whilst applying just the opposite rule to the battalion, for the Captain is very rarely called upon to perform great tactical or strategical operations on service. His objective, whether he be on the offensive or on the defensive, is in general very clearly marked out for him, but his own immediate share in the action is successful or not according to the manner in which he carries out his instructions, to the way in which his men take advantage of the ground, to their skill and steadiness in firing, to their attention to all signals and orders; for the more the fate of battles

depends upon the independent action of the individual the greater is the demand upon discipline, that is to say, upon ready obedience, thanks to which the independent action of the many is concentrated into one great whole, one great power. We have had quite lately a proof of how all the latest inventions—breech-loaders, mitrailleuses, rifled guns—count as nothing against the most primitive of all weapons, the spear, in the absence of discipline. I allude to the destruction of Baker's troops near Suakin. For I cannot allow that the Egyptian is by nature a coward. The troops of Mehemet Ali and of Ibrahim proved the contrary in the first half of this century. To resume: I consider that up to and within the company all tactical instruction should be confined to the correct performance of specified evolutions, and even this will give the Captain quite enough to do.

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The company Officers, Captains and Lieutenants, are really the very soul of an infantry regiment as regards instruction and performance of duty. The corresponding Officers of other arms are doubtless of similar importance, but still we must remember that when dealing with cavalry we reckon by *horses*, with artillery by *guns*, whereas with infantry we have only to do with *men*, which shows that in the last-named arm human nature is alone in question, and the influence exercised upon the individual soldier therefore attains its highest importance in the infantry.

This influence, this power over the feelings of the men, is only possessed by the company Officer. The non-commissioned officer is the assistant of the Captain and of his subalterns, carrying out their orders, having himself been formed by them, whilst the Field Officer, again, is too far removed from the private, and cannot be expected to have an intimate knowledge of all the men of his battalion. The company Officer alone knows each Tommy Atkins individually, having instructed, praised, blamed, punished, and rewarded him. On that account the soldier follows his Officer into battle with confidence, and it is his immediate superior who can best rouse him to deeds of valour. Who has not witnessed many examples of this in war? During an outpost skirmish which took place on Easter Monday, 1864, in front of the redoubts of Düppel, when the enemy's rifle-pits were attacked at night, two companies of our 18th and 8th Regiments ran beyond the pits instead of occupying them as intended, found themselves at daybreak close to the Danish redoubts, which were too strong to be carried by assault, and had to retire with severe loss. An Upper Silesian private being blamed for having gone so far ahead by his squire, who had followed the Army as a Knight of St. John, replied in his broken German, "But, my good sir, when the Lieutenant goes ahead one is bound to follow." Again, during a fight in a village before Paris the churchyard on one side of it was occupied by a half-company of ours. The regiment to which this detachment belonged had always been remarkable for gallantry, so we were all the more astonished when the enemy, making a sortie, carried the churchyard with a rush, in consequence of which we had to storm it again. After the fight I asked some of the men belonging to the first garrison how it was they let the French turn them out: "It is just this," said they, "there was no Officer to tell us what to do, so we just bolted."

Both Officers had unluckily been knocked over by the enemy's artillery fire at the beginning of the affair, one being killed, the other wounded and insensible. But no further examples are necessary. Every infantry Officer who has been in action can cite many instances which prove that in our Army the company Officer is the guiding spirit of the infantry, inspiring the men with his own ardour and followed by them with perfect confidence.[1]

[1] And so it should be in all armies. In few, if any however, is the influence of

Even in the last century General v. Rüchel remarked, "the Officers are the soul of the Prussian Army," and since in these days it has become necessary at the most critical period of battle to dissolve the mass of fighting men into atoms which can only be reached by the voice of the nearest Lieutenant, the truth of the General's saying has become all the more striking; so that if I maintained in my second letter that it was not the Prussian schoolmaster but the Prussian non-commissioned officer who had gained our victories, further consideration now leads to the assertion that it was neither the schoolmaster nor the non-commissioned officer, but the Lieutenant, who gained the day for us. Not but what this same Lieutenant is in peace one of the soldier's schoolmasters. In saying this I do not for a moment mean to depreciate the work done by Officers of higher rank, and I will at once warn my readers that in my further observations I shall carefully guard myself against doing so. At present it will be sufficient to remark, in order to prevent any mischievous deductions being drawn from the rather paradoxical statement just made, that all Officers of higher rank were once upon a time Lieutenants, and that all Lieutenants will some day become Officers of the higher grades. But just now we have to deal more especially with the infantry Lieutenant or rather with the company Officer, including the Captain, and we ask whence arises the influence which he exercises over the masses—an influence which creates marvels of heroism, and which leads men to obey his every nod even in moments of the greatest peril, when the loosening effect of the modern mode of fighting has emancipated them from immediate control and supervision. The answer to this question is, it arises from the Officer's unwearied energy, from his spotless honour, from his Spartan frugality. There have been times of piping peace when to men in general the work of an Officer appeared limited to mounting guard and to spending during spring and summer some hours daily at drill or in manœuvring across country. It was during this period that certain nicknames for the Lieutenant originated, such as "pavement crusher," and such like; but when do you now see a Lieutenant idling in the streets? If ever, it is at midday when the men are dining, and he is on his way to a restaurant to get his lunch, for his dinner hour is at 3 or at 4; and again on Sundays when he is paying visits to his friends. Otherwise he is fully occupied from early morn to dewy eve. At sunrise he has to inspect his men, to see that they are clean and orderly, and to find fault if occasion arises. Then he instructs and drills each man individually. Gymnastics, marching exercises, construction of the rifle, practice with it, field duties, and interior economy; all these things have to be taught, and he should in every way furnish in his own person an example to be followed, because the soldier will only learn to do anything at all as long as the Officer can do it better. And so he is busy throughout the livelong day. To the casual observer who only gains an occasional glance at a parade-ground in crossing it, it seems as if the little matters of drill can be got through easily in a few hours, but the infantry Officer knows what pains and labour are required for the purpose, and whoever, even without being a soldier, will read my former letters with unprejudiced mind, will understand this, particularly if he takes count of the time expended in learning the use of the rifle. A company fires away 15,000 to 20,000 shots annually at target practice, not a shot being fired except in presence of an Officer, who is responsible for the observance of all regulations to ensure safety, and for the entry of every shot in the company register. There are seldom more than two Officers in a company available for this duty. What a trial it is to the nerves, to the endurance, to the con-

the company Officer as strong as in that of Germany, for in few armies are the power and responsibility of the company Officer sufficiently recognized.—Tr.

scientiousness of the Officer, who must never for a moment allow his attention to relax when on the practice-ground, but must stand there hour after hour, winter and summer, at one time in snow and frost, at another under a scorching sun, watching every shot, seeing to the position of the firer, to the observance of all rules for the prevention of accidents, to the correctness of all entries. For if there is the slightest neglect accidents will arise, and the Officer at the firing-point will be tried by court-martial. In addition to this, he has often to perform his duty in spite of the ill-will and opposition of civilians and even of the civil authorities; for the latter have sometimes taken upon themselves to prohibit officially the continuation of target practice because a rifle has happened to go off when pointed up in the air, thus endangering people behind the butt. And this may well be, for we have known men accidentally wounded in action at a distance of 4,000 paces from the enemy's skirmishers. Many think that the Lieutenant has done all his work by 4 o'clock, when he goes to dinner. Not so. Hardly is dinner over, when the lecture time begins, when it is the business of some of the Lieutenants to give theoretical instruction to the non-commissioned officers, of others to instruct the privates. This branch of instruction is positively necessary, especially in military matters, to which, however, the instructor does not confine himself entirely; on the contrary, he teaches his men many things which are afterwards useful to them in civil life, and the few recruits who join without knowing how to read and write acquire these arts whilst in the Army. Many men learn more whilst in the ranks than they have done during the whole of their previous schooling. I remember when I was a Lieutenant I taught reading, writing, and arithmetic to a recruit who had plenty of brains, but whose education had been neglected, and who afterwards became sergeant, and later on an excellent paymaster's clerk. Army schools produce better results on an average than civil schools, because the scholars in the former, being twenty years of age and over, have greater application and appreciate the advantages of education better than the children who attend the latter.

On that account they lean more upon the teachers of their riper years, following their lead in times of hardship and of danger. But the day's work of our Lieutenant is not yet over; for besides having to perform his daily duties, he has to perfect himself in performing them. He must himself practise gymnastic exercises, he must study, give lectures, attend all regimental conferences, write professional essays, and take part in the war-game. Three or four evenings of each week are spent in this manner, the remaining evenings being alone available for society and amusement. In fact, so hard is the work of the regimental Officer, that those who succeed in gaining admission to the "Kriegsakademie" (which answers to our Staff College), find the course of study there, severe and trying as it is, quite a relief after the worry of regimental duty. But the Captain is even harder worked than the Lieutenant. He shares the labours of his subs, and whilst they give special instruction goes from one to the other to superintend and at the same time to assist and give counsel to the more inexperienced amongst them. If he goes to his quarters, hoping to devote an hour to relaxation or to family intercourse, the company sergeant-major is sure to make his appearance with a "crime," which has to be inquired into and disposed of, the entry being duly made in the defaulter's book, another time it will be some question of accounts; or his presence will be required at the "stores" to fit his men's clothing, or he will have to see to some irregularity in the barrack-rooms, for he is responsible for all that concerns his company down to the minutest details, and must be conversant with everything. And thus it has passed into a proverb that the commander of a company can never be sure of his life, because he can never enjoy it. I know well that Officers of

similar rank in the other arms have their time quite as fully occupied, but the infantry Lieutenant must run about on foot during the hardest part of his work, that is to say, at drills or manœuvres, whilst cavalry and artillery Officers ride; so that greater demands are made upon the strength of the former. But labour and exertion alone would not qualify the Officer to exercise so remarkable an influence over his men if he did not pride himself, as he does, upon his spotless honour, and if the private soldier were not convinced that he can depend most entirely upon that honour. The soldier is well aware that the Officer is his superior in that respect; he knows that the Officer will always of his own accord go to the front to set him an example; that the Officer will for the sake of his own reputation always be the first where there is danger, and thence comes the feeling that he, as it were, belongs to the Officer, that it is impossible to leave him in the lurch; in short, that spirit which found its expression in the words, "When the Lieutenant goes ahead, we are bound to follow him."

I might fill volumes before exhausting all I could say upon this point of the Officer's honour; but were I to pursue the subject further with you, it would be a case of "carrying coals to Newcastle." The high standard of honour in our corps of Officers is recognized with admiration by all cultivated civilians, and is viewed with ill-will by all those who desire to upset our social and political institutions. How such men rejoice and scream with delight when an occasional instance occurs if one out of ten thousand Officers disgraces his position. For some time the papers are full of it, and make use of the case to throw discredit upon the whole corps of Officers; but in vain, for as a body it remains unsullied. It drives from its midst without pity and without hope of pardon the erring individual, and rises in public estimation by its honesty and plain dealing, because showing that it cares not for an outward varnish of respectability, but must be honest to the core.

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The third quality mentioned as productive of the Officer's influences over the men is Spartan frugality, in which the infantry subaltern surpasses those of the other arms, and this same frugality, amidst his many labours, testifies to his high feeling of honour. There are certainly some cavalry Officers equally frugal, but one finds, as a general rule, that most of the young gentlemen who are comparatively well off, and thus need not live so penuriously, join the latter arm. But the great majority of infantry Officers are wretchedly poor, and the pay which they receive for their increasing labours is very small—so small that our great statesmen when in the Chambers spoke of the "brilliant misery" of the Lieutenant of the period. Even now a Lieutenant's pay and allowances[1] are so small that he is exposed to bitter privations unless helped by his family—privations which he bears quietly in private, whilst in public he maintains the dignity of his position. Many parents, doubtless, when their sons join the Service draw upon their capital to give them an allowance as long as they are subalterns, but many more cannot do this. I have known young gentlemen from the Cadet Corps join my regiment, whose mothers, Officers' widows, could give them nothing but five dollars once for all and an old coat of their father's; others belonging to good old families who did not even get their five dollars, and whose

[1] The pay and allowances of an—

Infantry	1st	Lieutenant are	(maximum) ..	£105
"		"	(minimum) ..	83
"	2nd	"	(maximum) ..	96
"		"	(minimum) ..	73

the pay being the same everywhere, but the allowances varying according to the nature of the garrison town.—TR.

sisters reckoned upon getting some of their scanty pay. You must not, therefore, be surprised to see a young Officer who has been invited to tea by some friends display a wonderful appetite for bread and butter. He may confess some day, when he is better off, that on the evening in question he was so hungry because he had gone all day without food for want of money. Another will buy the daily bread rations of his servant, who is better off than himself, under the pretext that it suits his health better, but really because it is cheaper than any other bread. That Officers such as these freeze in their rooms because they cannot afford to buy fuel; that they walk about in cold weather without overcoats, so as not to wear out their good uniforms too quickly, pretending that they can't bear warm clothing; all this will be well understood. At the same time when these same stoics have to appear on parade, in public places or in society, they are remarkable for the elegance of their appearance and for their cheerful mien. You may perhaps object that there are exceptions to this rule, that there are Officers who give way to the prevailing love of pleasure, who waste their own money and the family property, ending by being plunged into debt; I reply, how can you expect all Officers to escape infection by the prevailing epidemic? But the exceptions prove the rule, and the wonderful hubbub created by such exceptional cases is of itself sufficient proof that the public is accustomed to and expects Spartan frugality on the part of our Lieutenants. What now is the private soldier's feeling with regard to such an Officer? He does not pity, but is full of respect for his Lieutenant. He soon learns from his comrade, the Officer's servant, how his master fares, and when he finds out that the latter is comparatively poorer and worse paid than himself and can afford to spend less on amusement than he can—although his instructor in all matters and his guide in danger and difficulty—how can he help following such a leader with all his heart?[1]

The Battalion.

The training of the battalion is divided into two parts, namely, drill and battle training. Our Field Exercise Book gives all necessary directions for both. Those concerning battle training are so elastic that they can be adapted to every situation, and are not only quite sufficient for the purpose, but we can hardly imagine them capable of improvement, affording as they do a good foundation to build upon, and at the same time leaving plenty of room for individual action, thus encouraging to the utmost that initiative on the part of subordinate Officers which is so necessary an accompaniment of fighting in extended order. The more I study our Field Exercise Book the more I admire the spirit which inspires it, and which finds full expression in paragraphs 112 and 127,[2] the latter of which is intended specially for the brigade, but is also applicable to the battalion. Yet we often, nay, generally, find that those paragraphs are not acted up to at battalion exercises. On the contrary, the further we get from our last experience of war the more stiff, conventional, and formal become the tactics and training of our battalions, unless inspecting Officers use their influence against this pedantry, and insist

[1] The comparative poverty of the German landed gentry is doubtless favourable to her military strength.—Tr.

[2] Para. 112 contains "general remarks" upon the 18th chapter, which treats of "The battalion in battle, the use of skirmishers and of company columns in general."

Para. 127 contains "general remarks" upon the 20th chapter, which treats of "Movements of the brigade when in order of battle." Both paras. contain much that is noteworthy founded upon the latest experience of war.—Tr.

upon the form being subordinate to the spirit. This is, however, a difficult matter, for the existence of stiffness and formality in such things is not a sign of indolence, but rather of excessive zeal on the part of the battalion commander. Hence it follows that the manner in which the Officer handles his battalion becomes day by day more and more incompatible with the realities of war, whilst this very consequence is produced by the commander's earnest endeavour to bring his battalion up to the highest pitch of perfection. I will cite, by way of example, a few cases in support of my assertions. Although we find at page 152 of our Field Exercise Book[1] the employment of the battalion column distinctly prohibited, except under certain special circumstances, the greater part of the time spent in battalion exercises is devoted to extending skirmishers from the battalion column, which, after the skirmishers have extended and opened fire, remains so close to them that it would most certainly share their losses if thus situated in actual warfare. The utmost they do is to push forward the flank companies, and the great aim is to arrive at this normal formation with the central companies exactly in rear of the middle of the interval. One rarely sees advantage taken of the latitude given as to which and how many companies are thrown forward, or of the variations sanctioned[2] in paragraph 111, or again of the injunctions given in paragraph 112. At the outside one sees towards the end of the drill some movements with companies in two or three lines, but without any application of such movements to battle.

Observe the manner in which the simple operation of reinforcing a line of skirmishers who are lying down and firing is carried out. According to regulation tactical order must be preserved, and intermingling of different units in the firing line must be avoided. So when a fresh "zug" comes up in extended order to reinforce the old skirmishers the latter generally stand up and close right or left to make way for the new comers.[3] Would such a flank movement be feasible if the action were sufficiently severe for reinforcements to be required? Would not the men who stand up and close be sure marks for the enemy's fire? Might not the "züge" which first move out leave intervals between them for any reinforcements which may subsequently be required? Would not the men, moreover, be thus more under control of their Officers being extended over less ground, and would not their fire be thus more effective? Being thus kept together also would they not have better opportunity of availing themselves of cover by taking advantage of accidents of ground? The defect referred to becomes more evident when several battalions are side by side in brigade, the skirmishers being then often directed to cover the whole front, and to extend themselves equally along it so that they are often ten paces apart, although the maximum interval sanctioned by regulation is three paces a man and six paces a file. As if there could be any harm in leaving intervals of even 200 paces between the skirmishing "züge," and as if any body of enemies could make its way

[1] The passage reads as follows: "Under effective fire of the enemy the employment of the battalion column is only justifiable under particular circumstances. The normal fighting formation of a battalion in first line is therefore in company column."—TR.

[2] Para. 111 treats of the use of "company columns," and is well worth study, as it gives a good account of the many ways in which this valuable formation may be employed.—TR.

[3] I am surprised to find that anything so unpractical should be still tolerated in the German Army. The absurdity of such a practice was pointed out to me when as a recruit I began to learn the art of skirmishing in the 43rd Light Infantry nearly forty years ago, and doubtless neither that regiment nor any of the old light division regiments had been allowed to act as described in this letter since the days of the camp at Hythe.—TR.

through such an interval without being destroyed. Again, when do you see a battalion commander allow Officers in the firing line to judge for themselves whether to employ individual or rapid independent fire, the group volley or the fixed number of rounds, as most adapted to the circumstances of the moment? Or does the battalion commander ever permit Captains of companies which are moving up in support to employ the formation which each thinks best for the occasion, line, column, or what not? Does he not, on the contrary, prefer that all companies should act alike for the sake of appearance and uniformity? Would he, however, on actual service be always able to regulate such things himself? I will only mention one of the formalities to which the regular shape of the drill-ground is apt to give rise, and which often has a damaging effect on the intellect. When a battalion has been skirmishing and the assembly sounds for double column to be formed according to the usual custom at the end of the exercise, the front of the column generally faces exactly towards the side of the drill-ground, because the battalion is generally expected to march past before going home. Therefore, an oblique formation is rarely practised, so that there would be a good deal of bother and loss of time if the battalion were called upon to assemble fronting a certain position, we will say, on a certain church tower. To gain the power, however, of doing this sort of thing quickly is an important part of war training, without which there would be an excessive waste of time and a great deal of useless fatigue entailed upon the men if an Officer were ordered to form up masses of troops in a position suitable to the ground; for instance, under cover in rear of a line of heights, and such like.[1] Barrack-square customs, such as that just referred to, exist in great numbers, without mentioning the little shifts and dodges inapplicable to war, but which promote smart and steady drill before an Inspecting Officer. Every soldier knows this, and I will not weary you by detailing them, but will proceed to treat of the personal action and demeanour of the battalion commander.

At the commencement of the "battle exercise" you will see him on horseback by the side of the first skirmisher who opens fire, and who is made to lie down flat for the sake of shelter. He remains in the firing line during the whole action, or should it occur to him that he could not exist there in battle he retires at the utmost to some point between the skirmishers and the nearest support, from which post he issues orders and makes signals. Should, however, a movement of any sort become necessary, a flank attack or a reinforcement, he is certain to ride to the place and see to it himself. You may be especially sure that he will do this if a mistake has been made, an order misunderstood, a wrong mode of firing used, or, in short, if anything has been done contrary to his wishes. If he met his deserts he would be put *hors de combat* by an umpire a hundred times an hour. He goes everywhere except to the one point where if on actual service he would have remained the whole time, namely, with the company kept back as his last reserve, and with which he should show himself for the first time in the fighting line unless he wishes to let his battalion get out of hand sooner than it need. Such unreal scenes from life in the drill-field create very false impressions upon those who have not seen war, for they are naturally led to suppose that such things occur in action; and when they find how unlike the realities of war are to their peace experience many of them get bewildered. And, again, the private soldier who has been always accustomed to see the Major[2] well to the front at drill is apt to make unflattering remarks when this gentleman betakes himself to his reserve company as soon as the bullets begin to whistle,

[1] I have known excellent practice in this way given at our own brigade and battalion drills when "changes of positions" are made.—TR.

[2] Major commanding the battalion.—TR.

and the consequence of this is that Field Officers to avoid such remarks make a practice, at any rate at their first battle, of riding to the same points which they frequented when under fire of blank cartridge. A General in high position and a veteran of the old wars, however, said in 1850, when criticizing a manœuvre and remarking upon unrealities of this kind with characteristic irony, he was sure that the first ball cartridge would set things right. But he was mistaken. At St. Privat mounted Officers rode just where they had been in the habit of riding in peace time, the consequence of which was that at the end of that day only a few of the Field Officers and Adjutants of the infantry of the Guard Corps were fit for duty, most of them being killed or wounded. Very honourable to them indeed, but quite unnecessary, and most damaging to the interests of the Service and of our country. When we discuss this question quietly it appears as clear as possible, and one only wonders how such unrealities can be tolerated. But there must be good reason for their general occurrence, and it is well worth while to seek for this reason if we wish to avoid the evils resulting from them. The first and foremost reason is that the battalion commander when beginning to train his corps cannot remain at the post which he would occupy in action, namely, with the rear company, because he finds occasion every moment to instruct and correct, being obliged in consequence to ride backwards and forwards; and if he returns to his proper place at any moment something is sure to happen again in the fighting line which makes his presence there necessary. He therefore prefers remaining in front. In theory it would be better to pass over mistakes for the time, and to defer remarks to intervals of repose and to the end of the drill. But this is not practicable. There is always so much to criticize that he would have to interrupt the operations very frequently to call the Officers together and give them long lectures, or else he would give way to the temptation of deferring the whole critique till next morning's parade, when he would find that by the end of his lecture the whole time available for drill was over, and that he had to dismiss the men to their dinners—a scene which I once myself witnessed. Moreover, a few words on the spot at the very moment have much greater effect, and are much more instructive than the most complete and exhaustive dissertation given some time after. Besides which, the battalion commander must be near the fighting line if he wishes to notice and remark upon all mistakes, for he cannot from his proper battle-post near the reserve hear wrong words of command, should such be given, as to the mode of firing, nor can he see whether proper aim is taken. The battalion commander must, therefore, necessarily place himself, on the first day of "battle practice," where he would not be able to remain in action, and this afterwards becomes a habit with him. The only occasion on which he might place himself where he should be according to the rules of war is the day of inspection; but it is too much to expect of a man that he should all at once for that one day give up what has become a fixed habit, and still more that he should get his battalion to adapt itself all at once to a new mechanism of command just when he wants to show it off to the best advantage, and if possible to avoid all mistakes. You may, perhaps, suggest that the commander might well, during the first elementary period of training, go about from place to place as he wishes, but that during the second period when he comes to "battle practice" he should always remain where he would be in action. A very good idea, but hardly practicable. The period allowed for battalion training is so short that the Commanding Officer is glad if he can find time to practise even once in the course of the period each movement included in the Field Exercise Book, so that he is unable to divide the days which are allowed him into two periods, the former devoted to elementary, the latter to applied tactics. For during the three weeks allotted to battalion training if he gets—after making allowance for Sundays, holidays, garrison

guards, and fatigues—ten full working days, he may consider himself fortunate. Any Commanding Officer who has tried to work out the plan suggested has arrived at the outside at getting two days for real "battle practice," namely, the inspection day, and that preceding it. Thus, he was naturally led to rehearse on the day before the inspection the exact movements which he intended to perform at the latter, so that the inspection was degraded into a mere theatrical display, a sort of military ballet, thus rendering the work of both days worthless for the purpose of battle training.

The inclination of the battalion commander to be everywhere himself and to see to everything himself is increased by a fact which is easily intelligible, namely, that the Inspecting Officer makes him responsible for every error which may be committed. "Just look, Major, how that company is formed," or "See! the skirmishers of that company are advancing at the double; that is all wrong." After one or two such remarks from the General you will see the Major galloping from "zug" to "zug" to prevent a repetition of the mistake. In consequence, many a battalion commander restricts himself to practising from paragraphs 77 to 98 of the Field Exercise Book, and rarely soars into the higher regions of tactics treated of in Part IV.[1] If able to perform the various evolutions described in the paragraphs mentioned with satisfactory precision the battalion is sure to make a good impression, and some imperfections in rendering the contents of Part IV will be condoned. This, however, means a return to stiffness, and to mass formations which are out of keeping with the present firearms, and can only lead to massive losses. I have often heard the habit of "working a corps up" for its inspection bitterly condemned, but if blame was ever ill-deserved it is in this case, for the strength of an army depends upon its power of attaining an object at the will of one man, that is to say, it depends upon obedience and discipline; not that *formal* obedience which consists in merely doing what you are told and in awaiting orders, but that *active* obedience which leads a man to discover and anticipate the wishes of his superiors. The Officer, therefore, who endeavours to present his corps before the Inspecting Officer in a condition such as he knows will be pleasing to him is not necessarily a time-server, but one who acts in that true spirit of obedience which has made our Army great. I myself have been affected in a remarkable way by the prevailing inclination on the part of commanders to see to everything themselves. I believe I told you once before how, when a single battalion was engaged in a reconnoitring skirmish, the Divisional, brigade, regimental, and battalion commanders, with their several staffs and accompanied by a reigning German Prince, were all in the foremost line of skirmishers. Accustomed as those gentlemen were at all inspections to see to everything themselves, and looking upon battle merely as a sort of first-class inspection, they behaved just as they would at a peace manœuvre. On another occasion a Division in close formation was advancing on some enterprise against the enemy. The Divisional General, as well as the commanders of the leading brigade, regiment, and battalion, were riding just in rear of the foremost troops. The first man wounded was a mounted orderly, who was struck by a bullet in the breast, and fell from his horse just behind the General. Not to mention the

[1] These paras. form the 14th chapter. "Formation of the battalion in two ranks (battle formation)," which treats almost entirely of movements in close order; column formations, deployments, &c., three of these paras. only being devoted to the extension of skirmishers from line and column. Part IV is entirely confined to "battle practice" (Gefechts-übung), comprising two chapters, one of which treats of the training of the men individually and collectively for fighting in extended order; also of the part played therein by Officers and non-commissioned officers, whilst the other explains the action of the battalion in battle, the general use of skirmishers and of company columns.—Tr.

disproportionate number of casualties amongst superior Officers produced by this practice, together with the uncertainty in transmission of orders arising from it, we may notice another bad result. To each man is allotted by nature a certain portion of bodily and nervous power. If you try your bodily strength prematurely before the actual necessity for doing so arises, you run the risk of finding it fail just when it is most needed. The same thing applies to the nerves. No one is insensible to danger. Strength of nerve alone enables a man to overcome his apprehensions. The superior Officer who goes into the fighting line sooner than he need, runs the risk of finding his nerve fail him at the critical moment. This does not produce a sudden outbreak of cowardice—by no means. Shakiness of nerve does not act in so straightforward a manner, but works upon a man surreptitiously by suggesting to him strategical and tactical caution, by proving to him that according to all the rules of art he is bound to temporize, to remain on the defensive, to break off the engagement, or to do whatever the fine scientific term for the thing may be. For instance, a Divisional General who has been from sunrise till midday in the foremost line of skirmishers, has heard the bullets whistling about his head for five or six hours, whilst the advanced guard was driving back the enemy's outposts, and has at last arrived in front of the main position strongly occupied by an enemy, who perhaps must needs do his best to hold it because he cannot see his way to retiring from it in safety; a General, I say, thus circumstanced will be very apt to think that his troops have done enough for the day, being himself tired by having been six hours under fire; yet all except the leading battalions are perfectly fresh. So he decides to put off the attack till next day because then the other Divisions will be forwarder, throws out his outposts, and lets his people rest. The enemy is for a second time surprised, but on this occasion agreeably so, for he now has an opportunity of retiring without loss, and escapes from the impending catastrophe. Now, if this General had taken it easier himself, had he not used himself up in the six hours' skirmish, he would at the very moment when he stopped the attack, have come, for the first time on that day, to the front, fresh in body and mind, would have found that nothing serious had hitherto been done, and would have ordered a general attack. Thus, untimely excess of zeal, which leads an Officer to look to the smallest details himself, may produce subsequent want of energy; premature gallantry may be the cause of eventual indecision and want of enterprise. These mistakes were not committed by our Generals in action during the latter part of the French war, which lasted long enough for them to see their errors, and for some time after that war these mistakes were also banished from peace practice. But little by little these bad habits crept in again, and now bid fair to become more and more firmly rooted the longer peace lasts, not only because the requirements of peace service, culminating as they do in the inspection, confirm these habits, but also because the experience gained in the field dies away.[1]

"War experience has only a restricted value," once remarked a military bookworm to the amusement of his friends. But to a certain extent he was right. The Officer of each rank gains experience in war only for the performance of his own duty and of that appertaining to the next higher grade. Thus: the Captain learns what concerns the command of a company and of a battalion, but not how to handle a regiment or brigade. The only exception is in the case of young Officers, who keep their eyes open whilst acting as aides-de-camp to some General in high command.

Now, however, after thirteen years of peace, promotion has gone on a good

[1] There is no European army in which these bad habits arising from continued peace have been more prevalent than in our own I believe; yet one part or other of

deal, and I cannot help wishing, for the sake of the younger generation, that there may be soon no more battalion commanders in existence who took part in the last war as subalterns in companies, for how can you expect a Lieutenant, whilst commanding a "zug" of skirmishers in battle, to gain the experience which will teach him how to lead a battalion in action? When he has to do it he will act as he would do at an inspection. As we have pointed out the tendency which exists on the part of battalion commanders for unpractical methods of command, for stiffness of formation, for putting themselves in the wrong place, for a system of direction which is impracticable on service, the question naturally arises, "Where to find a remedy for these evils?"

* * * * * * *

That they have been recognized by others, and, if not acknowledged in so many words, that their existence has been fully admitted, is evident from the many attempts made to find a remedy for them. Up to the middle of the present century the practice at battalion exercises was to confine yourself to elementary tactics in stiff formation, in fact to such exercises as marching to a flank, wheeling, manual exercise, column formation, deployments, direct and oblique movements. Skirmishers were but little used, being only thrown out from the whole battalion. The great point of all was the march past. But the old fashion was modified about the middle of the century, and battalion commanders were allowed at inspection, when the drill was over, to go through some "battle practice," including evolutions which they themselves had thought out, and which were not "in the book." This practice made Field Officers reflect, and produced much that was novel and good. Whoever brought out anything new, even if it were not quite practical, got the reputation of being at least a man who thought for himself. This naturally led to excess. Every Commanding Officer wished to invent something, and made a secret of his invention up to the inspection of the battalion, tinkering at it throughout the year, so as to be able to show off something even surpassing his *chef-d'œuvre* of the year before. Then many wonderful sights were seen, of which, perhaps, the least startling was the chronic appearance of a river on the drill-ground, indicated by some men, and probably on an eminence. These eccentric performances soon got the nickname of "Turks-manœuvres," or briefly, "Turks," on account of the disorder which accompanied them. But as every battalion commander thought himself bound to show off his own special "Turk" before the Inspecting Officer, the authority of the Field Exercise Book became much impaired, because every one began to think that once on active service you might and ought to shake yourself free from all its shackles. Precision in drill began to fall off and discipline to suffer. The old drill instructor of the day gave rather an original turn to the acknowledgment of this evil when he remarked, "The march past, gentlemen, is like painting on glass, an art which has been lost." After some years the higher powers interfered to check the prevailing tendency towards a departure from regulation and towards inventions such as alluded to, insisting firmly upon Commanding Officers only practising movements to be found in the book, if they chose to indulge in their "Turks."

The company column, in combination with fighting in extended order, became more and more widely used in accordance with supplementary instructions issued. After our war experiences, especially that gained in 1870–71, permission was again given to bring tactical suggestions forward on the drill-ground in a practical way.

These were principally attempts at solving the problem how best to advance

our army is almost always engaged in warfare of some sort, which cannot be said of any other European army.—Tr.

to attack over open ground under fire. Once again, the most wonderful formations were witnessed. One saw at times files of men sown broadcast over a whole drill-ground some 300 paces square, and one could not help feeling that the practice of utter dislocation was here raised to a system.[1] One saw battalions, after running till the men became breathless and fell from exhaustion, commence firing while still in a state of feverish excitement, so that one might fairly doubt whether a shot from them would tell. One even saw dense clouds of skirmishers firing as they ran, without aiming and with the rifle held horizontally to the hip. An endless mass of literature, full of tactical suggestions, troubled the brains of thinking Officers, who at length became utterly puzzled in distinguishing what they had only read in pamphlets from what was really in "the book." The new edition of that work, which appeared in March, 1876, put an end to this state of uncertainty. The 4th and 5th parts of this work are sufficient for all service requirements, and admit of infantry being always handled according to the military situation and to the character of the ground, the rules laid down being of the most elastic nature.

What then is to prevent our relapsing into stiffness, and placing our whole reliance on the chapters of Part III? The real remedy lies in the nature of the inspection, for a corps will certainly be trained so as to fit it for the sort of inspection it will have to undergo. In our Army, at least, discipline is, thank Heaven, still so good that such will be the case. The inspection of a battalion is generally conducted so that after the parade and march past a portion of the time is devoted to Part III, and the remainder to Part IV of the book. The Inspecting Officer generally states which evolutions out of the former part he wishes to see, afterwards allowing the Commanding Officer to give a representation of a combat in accordance with the rules laid down in the latter part, or else he gives him leave to do what he likes out of both parts. The consequence of this is that during the second part of the performance, usually called "battle practice," the Commanding Officer has to show how he thinks a battalion should be brought into action. He therefore tries his best to prevent each individual skirmisher from doing anything but what he wishes. He will have rehearsed his field-day beforehand with his Captains, dividing it exactly into periods, and he will try to prevent the slightest departure from his fore-arranged plan, lest the whole programme should be spoilt. But this preparatory rehearsal converts the whole thing into a theatrical display, which differs essentially from reality on account of the little knowledge anyone has at the commencement of a real action of what nature will be its later phases, and further, because in his endeavours to prevent all departure from his scheme, the Commanding Officer is obliged to go to many points where he could not show himself on actual service. In both ways the initiative of inferior Officers is crippled, and the practice is therefore to be condemned, though there is this much to be said for it, that it gives a Commanding Officer the power of showing exactly how he wishes his battalion to act in battle, in order to do which it is advisable to prevent all mistakes and false movements from being made. Another result of leaving the practice of "battle exercises" entirely to the Commanding Officer's discretion, is that he often plunges into the most scientific tactics mixed up with strategy, and that in consequence of the comparatively slow rate at which infantry can move, much time is taken and the strength of the men is sorely tried. This applies particularly to the tendency which is in principle fully justified of representing turning movements, for if a Commanding Officer wishes to avoid exposing the company told off to turn the enemy's flank to a crushing fire whilst making its flank move-

[1] Can some adventurous German have tried the four-deep system of attack?—Tr.

ment, he must detach it whilst still beyond effective range, that is to say, if the field of exercise is extensive enough, at 2,000 metres distance from the enemy, so that as the company will have in its turning movement to go over more ground than this, and as its advance will be delayed by having to move forward by successive rushes, and by at least keeping up some amount of skirmishing fire, this one operation will not take less than half-an-hour. Moreover, the flank attack hardly ever answers. Either it comes too late, that is to say, after the frontal attack is over, or it is made too soon, or else one of the attacks, either that in front or that on the flank, is held in check so long by the enemy's fire that it must surely fail. For infantry cannot, like cavalry, make up for loss of time by any considerable increase in speed. Only one form of attack combined with a flanking movement can be shown at peace practice without a great expenditure of time, which form was indeed ordered by one of our senior Generals in high position. He used to place, from the very first, the skirmishers of the company intended to make the turning movement at right angles to the skirmishers attacking in front, and order them to move on the enemy at once in this formation. This obliged the skirmishers of the flanking company to file off sideways with the company column in support on their outer flank. How the Officer in question could flatter himself that any enemy would submit to be outflanked in this fashion, is the more incomprehensible to me, that the real enemies whom I have seen him attack never gave him any grounds for expecting such magnanimity. I certainly act against the saying "*De mortuis nil nisi bonum*" in telling you this anecdote, but I wished to give you an example of the excesses to which inventiveness may proceed when Clausewitz's saying, "In war all is simple, but the simple is difficult," is forgotten. When I commanded a Division I did my best to remedy the evils alluded to (as far as the sphere of my influence admitted of my doing so), by the nature of my inspections. After some failures, owing to the zeal of Commanding Officers, who, in their anxiety to meet my wishes, went beyond the mark aimed at, I arrived at a system which approved itself during a seven years' trial. I am satisfied by the experience then gained that my Commanding Officers were perfectly competent to train their battalions properly, and that nothing but the style of previous inspections had prevented them from doing so.

Still more; as soon as my views were thoroughly understood, I had the pleasure to see my own tactical ideas improved upon by these gentlemen. This was only natural, for they had served longer in the infantry than I, and had practical war experience either as Field Officers or as Captains. So I learnt a lesson from my subordinates. Now I will tell you how I carried on my inspections, because I think you will therein find the solution of the problem before us. . . . . My inspection of a battalion commenced, according to the usual custom, with a parade and a march past. I attach great importance to these matters, because when you see men drawn up on parade you judge by their position in the ranks, and when you see them march past by the way in which they step, of the manner in which they have been individually drilled. A comparison of the remarks which I made when present at recruit and company drills, with what I observed when troops marched past, taught me this. Again, nothing shows so clearly the sort of treatment which men habitually receive as the expression of their faces when drawn up on parade for inspection. It is true that appearances may be deceptive, according to whether or not a battalion has been standing long on parade beforehand. To guard against unnecessary fatigue from this cause, I made battalions await my coming with piled arms, only allowing them to form up after my arrival on the ground. This gave me, too, an opportunity of seeing how things were done. It took a little more of my

time, but it saved the men. Before proceeding further I will remark that at the end of every inspection I made the battalions march past in a different formation from that shown at starting. I treated this second march past as a compliment to the battalion, as a solemn conclusion to the proceedings, taking occasion while it was going on to speak to the men in an encouraging manner. I should only have omitted the second march past when I had reason to be thoroughly dissatisfied with a battalion, but this was never once the case, for I always found at least zeal and good will. Another advantage of the parade and march past is that they are good tests of the degree in which the drill regulations are attended to. After the first march past I allowed the Commanding Officer from half to three quarters of an hour for movements explained in Part III of the Field Exercise Book, omitting the 16th chapter, which was reserved for the last when the battalion was thoroughly shaken up by field movements.[1]

In the course of three quarters of an hour one could form a pretty good opinion of the manner in which the orders regulating movements executed at the Commanding Officer's word of command were carried out. After a short interval of repose I proceeded to "battle practice," conducting this myself, giving the Commanding Officer quite simple tasks to work out, the enemy's position being generally marked by a couple of flags. All had to be done, as far as regards the communication of orders and the mode of executing them, as it would be on service. I allowed no movement nor word of command except those found in the Field Exercise Book. Captains received no instructions before the operations commenced, except such as were requisite to make them understand the supposed situation, and the meaning of the flags, or such as they might receive under similar circumstances in actual warfare. The Commanding Officer was bound to remain where he would be in a real fight. If the troops made a false move after being so completely in action that were the case one of actual service no counter-order could reach them, no such order was allowed to be sent, and the Commanding Officer had to modify his measures to suit the occurrence. All orders as to mode of firing (whether group volleys, the combined use of two or three sights at the long ranges, a limit to the number of rounds fired consecutively, with intervals of cessation, individual or rapid independent fire), and again, as to formation (extended order, line, column, and what sort of column), together with such details as lying down, doubling up, were left to the company Officers and non-commissioned officers, who were alone responsible for those matters, and whose action naturally gave rise to critical remarks in some cases. By reserving to myself the power of assigning the tactical task I was able to banish unnatural attempts at strategy from the operations ; moreover, I could prevent an undue amount of time being taken up by any one movement, and in case any operation appeared likely during its progress to last too long, for convenience I could cut it short by interposing some afterthought, such as a cavalry charge, or a change from offensive to defensive, and such like. In course of time, by thinking the matter well over beforehand, I arrived, thanks to constant practice, at putting a battalion through three or four tactical problems in the course of from three quarters of an hour to an hour.

Supposing, then, from three to five battalions to be quartered at the same station, from twelve to twenty battle scenes were represented annually before

[1] The 16th chapter is upon rallying the battalion after it has been broken up and dispersed in the course of an operation. This is done in the same manner as with us, only the rule is that unless otherwise ordered, the battalion forms up in double-column of züge at quarter distance.—Tr.

the same Field Officers and Captains, and I thus had the opportunity of going through the greater part of Part IV of our book.[1]

To make the matter clear, I will give a number of these tactical problems by way of example.

1. A single battalion makes a frontal attack upon a certain post. To shorten the operation, sometimes only the first 500 metres, at others the last 500 metres of the attack was represented.

2. A single battalion defends a post (redoubt, shelter-trench, wood).

3. A battalion on the march, acting as advanced guard, surprises the enemy, and

4. Is surprised by him.

5. A battalion being directed on the enemy's flank, succeeds in approaching to within 300 metres of him in fighting formation without being detected.

6. The battalion is supposed to be fighting in brigade, either in the centre or on a flank, in first or in second line.

7. A battalion which has been kept back as a last reserve in rear of the centre of a brigade is ordered to decide at any cost a skirmishing fight, which has been conducted with varying success for some time, and to carry forward with it the troops already in the fighting line to take part in a general attack.

8. The enemy having received reinforcements, or making flank attacks, the battalion is forced to change from offensive to defensive, or *vice versâ*.

These eight cases produce at least twenty different combinations, which may be varied greatly, according to the nature of the ground. Additional variety may be obtained by supposing a cavalry charge, either on the part of friend or foe, to take place in the middle of the operation, or by making the Commanding Officer non-effective. I introduced the latter supposition either when a Commanding Officer got under effective fire prematurely, or when one of the senior Captains in the regiment happened to be on parade, and I wished to give him a chance of showing himself competent to command a battalion. Conducted in this manner the inspection of a battalion in fieldwork took about two and a half hours, so that no more than two battalions could be inspected daily, as no Inspecting Officer could keep his attention fixed on details for a longer time than five hours. As five of the twelve battalions of my Division were quartered at one station, three at a second, while of the other four, two were together, and the remaining two at different places, I was able to see all my battalions in nine days, including one intervening Sunday. It was impossible to spend more time over details of drill without prolonging the period devoted to inspections at the expense of the regular training, my afternoons being besides taken up with other matters connected with the inspection, and also with my journeys from station to station. You may, perhaps, be surprised that all Divisional Generals should not adopt my system of inspection, if it is really a practical one. Their reason for not doing so is because they most of them endeavour to exercise their battalions and to arrange matters according to the wishes of the General commanding the army corps, who, however, cannot spend so much time over a battalion; indeed he cannot devote more than one hour on an average to each, and must needs allow the Commanding Officer to show him what movements he chooses to select. . . . . The system of inspection here proposed is quite sufficient to obtain a good idea of a Commanding Officer's capacity, for he, knowing the style of inspection to be expected, is induced to train his battalion in such a way that his subordinates will gain

[1] In Germany, all Field Officers and Captains in a garrison off duty are expected to be present as spectators at inspections of the corps they do not themselves belong to.—TR.

the habit of initiative necessary to them in battle, whilst he himself loses the habit of interfering on all occasions, a course which is out of place, and indeed impracticable on service, but into which he has been naturally led whilst schooling his men in elementary tactics. The General should conduct his inspection in a genial manner, for the uncertainty prevailing as to the movements which an Officer will be required to perform, the feeling of being under probation, and that the result may affect his future prospects, will often produce an anxiety and a nervousness which may be fatal to clearness of mind, and produce the complaint commonly known as "inspection fever," a complaint which must be got rid of before the patient's capacity can be fairly gauged. A timely joke may often act as a remedy. I remember the case of a very excitable Field Officer who was in general quite capable and steady, but who at the commencement of an inspection was so much under the influence of "inspection fever," that he gave the first simple words of command for marching past all wrong, and with a shaky voice. I rode up to him, and remarked quietly, "Major, I have so often seen your battalion drill capitally under your command, that if I were in your place I should not suffer from fever." He looked hard at me, smiled, and from that moment handled his battalion in a faultless manner.

Flank and Frontal Attacks.

There is some truth in the assertion that one can no longer make a frontal attack on a position, a village, and so forth, across an open plain, or up a glacis-like slope. The proper course in such cases is to occupy an enemy thus posted by artillery fire, and to make your attack on some other part of the position, where you can approach it under cover, or else to turn the enemy's flank. This is all very well if it be feasible, which is not however always the case. It may happen that a body of infantry, having other troops on its right and left, with more favourable ground in front of them, must, in order to get at the enemy, cross a perfectly open plain. Can the commander of this body when ordered to advance say, "I cannot go on. I must disobey my orders?" Not so: the only question for him is, in what mode should he advance so as to expose his people as little as possible to fire? The Field Exercise Book gives no clear prescription for this, particularly when the open space is exposed to a combination of shell, shrapnel, case, and rifle fire. We must therefore draw upon our war experience if we wish to form a clear conception of the manner in which we should act under such circumstances. At the battle of St. Privat, the infantry of the Guard Corps left the cover afforded by the depression which runs from north to south-westwards of Ste. Marie, and advanced to the attack of the French position. Being still formed in battalion columns, it was exposed at once unexpectedly to a most violent rifle fire, at a range previously thought ineffective. It nevertheless kept on advancing, but the fearful and increasing losses which it suffered completely broke up its tactical formation, so that when brought to a standstill by this tremendous fire, the foremost troops were merely disjointed groups of men, who lay down at from 500 to 600 paces from the enemy, and returned his fire. The advanced infantry of the XIIth Army Corps prolonged the firing line of the Guards to the left. The enemy's infantry, which had been pushed forwards down the open slope in front, withdrew upwards into the position, and was also driven back from the brow of the hill, between St. Privat and Amanvillers. Whilst a part of our artillery now established itself on the ground thus relinquished, the other batteries moved up closer to the fighting line of the infantry, and supported it by a tremendous fire, at so short a range that every shell told. When the left wing of the XIIth Army Corps advanced from Roncourt on St. Privat, the assailants

formed almost a semicircle round the latter village. One of our infantry Generals, who was directing the operations from the foremost line of skirmishers, remarked that the fire of the defenders from the loopholed walls of the gardens surrounding the village was almost silenced, and said to one of his aides-de-camp, "Now then, on we go, or we shall never get into the place." The aides-de-camp were on the point of riding off to communicate the General's orders, when the whole front line of skirmishers, both of the Guards and of the XIIth Army Corps, sprang up as if seized by one and the same impulse, and rushed into the village with cheers. This last rush and this capture of the extended circuit of outer walls cost but few lives, the defenders having apparently retired into the interior of the village, but once among the houses a protracted hand-to-hand struggle took place, as the French reserves were then, as was supposed, in the act of moving forward to replace the former defenders of the garden walls who had retired. As far as I could judge from my position with the artillery on the right of St. Privat, this supposition was correct. The day after the battle, which lasted till after dark, I found many of our dead and wounded foot soldiers scattered over the whole space between Ste. Marie and St. Privat, these symptoms of deadly combat becoming more and more pronounced the nearer you approached the latter place, till within 500 or 600 paces of it, when the bodies lay close together in rows forming a complete semicircle round it, but nearer to it there were but few. Some of my infantry comrades argued from this that the French rifle was sighted too high, and thus fired over our men's heads at close quarters. But the real reason was rather that our soldiers suffered most on the ground where they halted the longest to return the enemy's fire, which had almost entirely ceased when the assailants chose that favourable moment to make the last rush. I have before now related to you an episode of the battle of Sedan, which shows how unattackable infantry is in front if unshaken, if it fires steadily, and has plenty of ammunition. It is therefore necessary to shake it before you come within its effective range, either by threatening a flank, or by fire. We profited at Sedan by our previous experience, showing this by the way in which we made our attacks. On that day the infantry of the Guard, though not the same battalions which attacked St. Privat, took the Bois de la Garonne, a fortnight after the last-named action. I was with ninety guns of the Guard Artillery in position to the east of Givonne, along the brow of the hill, nearly as far as Daigny. The enemy's artillery fire was completely silenced, and General v. Pape determined to carry the Bois de la Garonne. He therefore settled with me that after I had shelled the wood for a certain time he should at an hour specified (we compared watches so as to be in agreement) move forward out of Givonne. I was then to cease firing, lest I should endanger his men. We conformed exactly to this arrangement.

The infantry of the Guard (Jäger and Fusiliers) climbed the heights and occupied the borders of the wood, after my ninety guns had kept up a murderous fire upon it at short range (1,200 to 1,600 paces). More than 10,000 unwounded prisoners were here taken, the regiments engaged in the attack having lost in the whole battle of Sedan only 12 Officers and 216 men,[1] of whom but a small portion can have fallen in the affair just described,

[1] According to the Prussian Staff history, 11,000 prisoners were secured on this occasion, a good many others having been taken, but having afterwards escaped. A large proportion of these men had surrendered without firing a shot. A good many guns and an eagle were also captured. The attacking force consisted, however, of a larger force apparently than stated by Prince Hohenlohe, namely, besides the battalions mentioned by him, of the 4th Regiment of the Guard and of a good many detachments from the XIIth (Saxon) Army Corps.—Tr.

seeing that the same regiments had already taken the village of Givonne, and that they afterwards lost many men when fighting inside the wood.

At St. Privat the infantry of the Guard lost 8,000 men, but the fighting at the Bois de la Garonne cannot be fairly compared with that at St. Privat, because the deep valley of Givonne enabled the assailants to arrive within a few hundred paces of the wood under cover, whilst a regular glacis-like slope extended for more than an English mile in front of St. Privat. Another attack on a village, of which I was also an eye-witness, bore more resemblance to that on St. Privat, namely, the storming of Le Bourget on 30th October, 1870. The left column, composed of the Alexander Regiment, and the Schützen Battalion of the Guard, advanced from Le Blanc Mesnil on the village accompanied by two batteries which prepared the assault, taking post at last pretty close to the enemy. Our artillery and infantry fire drove the defenders from the outskirts, which the skirmishing line reached, particularly at the southern end, almost without loss. The fighting from house to house, however, cost many lives. The attack made by the right column from Dagny near Le Blanc Mesnil was still more instructive in respect of the formation employed, for here the infantry was unsupported by artillery, the flanking fire kept up by the horse battery on the west end of the village, from its position north of Pont Iblon having doubtless but little effect on account of the distance. The battalion of the Franz Regiment had here to cross open ground over a space of 2,000 paces. The commander of this regiment had trained it beforehand for an attack of this kind, and now made it advance in a formation previously well practised. The fighting line was formed of two entire companies extended into a dense line of skirmishers divided into two wings, which moved forward alternately at a run for 300 paces. After every rush, each wing halted to lie down for the men to take breath, getting some cover amongst the high potato plants whilst the other wing ran on. As soon as they got near enough for the needle-gun to tell, the halted wing kept up a heavy fire upon the outskirts of the village. Even now, whilst writing this description, I can recall the joy with which we spectators, from our look-out place, witnessed this well-planned and well-executed attack. The best of it was that these battalions, as I was assured by their commander, met with hardly any loss till they got into the village, it was only in the stubborn fight inside it that they suffered.[1]

It is only fair, however, to remark that the defenders of Le Bourget were not such well-trained troops as those of St. Privat, that the position of the former village was not so commanding as that of the latter, and that the attack of the Franz Regiment took the French in flank. I can well realize, if I imagine myself in the position of the defenders, the trouble which this unwonted form of attack must have caused them. As soon as the French saw the first skirmishers they naturally opened fire upon them. All of a sudden, however, these same skirmishers disappeared from view amongst the potatoes.

Whether or when they remarked the rush of the other wing is doubtful, for the smoke of their own heavy fire would hang about the loop-holes through which they aimed. The line of defence being, moreover, not everywhere directed straight on the assailants, the defenders could not get their sights at once on the fresh wave of enemies, and by the time they had done so, the latter would have run their course, and would in their turn have been down amongst the potatoes, the smoke concealing this fact from

[1] According to Dr. Engel's official account, the Alexander Regiment had altogether on that day 45 casualties, the Schützen of the Guard 36, and the Franz Regiment 56.—Tr.

the French, and the other wing meanwhile coming on. Thus the two wings of German skirmishers got near enough to use their rifles with effect, and from that moment the halted wing poured its fire into the village, thus drawing upon itself that of the defenders, and enabling the advancing wing to make a further rush with comparative impunity. When I put myself in the place of the Frenchmen it seems to me quite natural that they, under the influence of the surprise caused by this rush across the open, soon ending with a cheer and a charge, should have evacuated the outskirts of the village as they did. Without doubt, the garrison of Le Bourget was on that day composed of troops of unequal value, consisting as it did of marines and regular infantry, mixed with "Moblots" and "Franctireurs de la Presse." All the same, they fought very hard afterwards amongst the houses; I am unable to say what troops were directly opposed to the Franz Regiment. With regard to the formation of the assailants, I must add, that the two échelons in rear of the skirmishers, the second of which was further subdivided into two échelons, marched as far as I could see in quick time and in open line, so as not to expose too dense a formation to the ravages of unaimed fire. They looked thus like thick lines of skirmishers. Now, although the attack on this side of Le Bourget succeeded without any material assistance from artillery, I think that as a matter of principle it will be conceded that a frontal attack across open ground should not be attempted without being preceded by a heavy fire of artillery.

The German official history of the war of 1870–71 gives, at page 668 of Part II, a brief notice of an attack on a village carried out just as it should be, and a detailed account of the same occurrence appeared in the "Jahrbücher für Armee und Marine," in the number for March, 1872.[1] According to these authorities, General v. Treskow ordered a heavy artillery fire to be directed on Villejouan during the battle of Beaugency-Cravant, because that village threatened his right flank, and he did not choose to leave it in the enemy's possession for the coming night.

Two batteries unlimbered against the village and shelled it for a whole hour, and under this fire a part of the defenders appear to have retired within the place. Our infantry (the Fusilier Battalion 76th Regiment) was directed to approach in such a manner as not to mask the fire of the batteries, and they crept up to within 200 paces without firing a shot, but then came under fire themselves. Upon this they rushed with cheers upon the village. The few defenders still remaining in the outskirts were overpowered, and indeed, the greater part of the garrison must have fled, as the battalion lost only 4 Officers and 88 men, including those who fell during the fighting inside the place, which lasted from noon till evening.

The victory of the Fusiliers was due in great measure to surprise. The battalion was formed in two échelons, the foremost of which was composed of Nos. 10 and 11 companies, each of which had extended two "züge" as skirmishers, Nos. 9 and 12 companies following as second échelon, at first together in rear of the centre, but when the leading companies broke into the east side of the village, taking ground to the right, and making their way in on the north side. We shall have to act, as a general rule, in a similar manner in future attacks of this kind, only that having now as far-ranging a rifle as our enemies, we shall be able to unite the effective fire of our skirmishers with that of the artillery from the first, if the latter is not sufficient of itself to frighten the defenders from the outskirts of the village, so that our task will be more easy of execution.

When once the enemy is quite driven away from the outskirts, it does not matter in what formation infantry advances, but if the artillery fire has not

[1] On the 10th December, 1870.—Tr.

succeeded either in annihilating or in frightening away the defenders, the co-operation of the infantry will be necessary. The success of the Franz Regiment at Le Bourget teaches us in what formation infantry can and must advance up to the point whence it will itself open fire, namely, in a strong line of skirmishers. Supports had best follow deployed, and there is nothing in our Field Exercise Book which forbids the use of the open line, that is, with intervals of a man's breadth between files, a formation which should be adopted if the enemy's infantry fire is still effective, in order not to present too good a target for chance shots. The second échelon may well move in close line, until pushed forward to join in the assault. I only propose this formation for open and level ground. When the least cover is to be found each unit will of course form a column the best adapted to take advantage of it. The inclination for flanking movements leads to a great extension of the front line of battle. This inclination is fully justified. The first combat in the open field of which I was witness, and which took place before Schleswig, on February 3, 1864, gave striking proof of this fact. The Austrian brigade Gondrecourt attacked the enemy in front with unsurpassable valour, carrying by assault Ober-Selk and the Königsberg, but having a fearful number of men killed and wounded in doing so. Two battalions were directed on the village of Jagel, and engaged in front of it in a serious action, making but little progress, particularly after Colonel Benedek was carried to the rear badly wounded. The assailants had just found their way into Jagel, when a company of the Augusta Regiment (Prussian), marching up by another road, appeared upon the defender's right flank. This had quite a magical effect upon the enemy, who, fearing to be surrounded, evacuated the whole village and the neighbouring enclosures, with great loss in killed, wounded, and prisoners, for the Prussian company had suddenly opened a rapid independent fire upon his right flank, and profiting by his confusion, had rushed into the village. Only one man of this company was wounded. A few days afterwards the Belgium Regiment belonging to the other Austrian brigade, together with the 9th Jäger Battalion, attacked the position of Oversee, which was strong in front. Again the Austrians suffered terrible loss, particularly in crossing the frozen lake, and in advancing against the place. It is doubtful whether, notwithstanding their wonderful bravery, they would have carried the position had not two Jäger companies turned the right flank, whilst two battalions of the Hessen Regiment came up afterwards, threatening the left flank, upon which the Danes evacuated the position and retired. But there must be no mistake about this, that a flanking movement such as that referred to can in general only be made successfully by altering the direction of your march, or by detaching a part of your force, when out of range and out of sight of the enemy. For, if the movement is not a surprise, its effect will not be so great. Should such a course not be possible, we must at least try, by extending our front, to prolong it beyond that of the enemy, and thus to outflank him, after which the outer wing must wheel inwards, and fall upon him. If, however, you attempt this sort of operation within sight and range of the enemy, you will be exposing yourself to a flank attack whilst doing so, and will probably suffer severely. It would appear to be a comparatively easy matter to strike the enemy's flank when you are yourself occupying a good defensive position, with reserves écheloned behind your wings, thus favourably placed either to surprise a hostile detachment bent on turning your flank by taking it in flank, or, should the enemy only make a frontal attack, to advance and to wheel inwards, thus falling upon the flank of their assailants, while they are already engaged with the troops in front of them.

Surprise, which is a necessary accompaniment of a flank attack, is facilitated by the fact that a defensive position is generally taken up on a ridge

which conceals everything in rear of it. The attack and defence of positions in front of Metz and Paris furnish numerous examples of sudden flank attacks of this kind being made by the defenders, that on the largest scale being the sally of the French infantry from Amanvillers against the artillery of our IXth Army Corps, on the 18th August, 1870. ("Prussian Staff History," pp. 712–713.)[1]

To make the counterstroke really effective, one should, when occupying a position, place as few infantry as possible along its front, and concentrate as powerful a force as you can in reserve behind both flanks. Since infantry have acquired the power of digging shelter-trenches in a very short time, we can now spare more men from the front attacked and place them in reserve. But when I speak of shelter-trenches, I am reminded of a circumstance which has often roused my wrath at peace manœuvres. I don't know how it is, but notwithstanding the great dislike of the German soldier for burrowing in the ground, and for throwing up defensive works; notwithstanding his great preference for offensive operations in war, if once the shelter-trench is there, it seems to have a wonderful attraction for him. How often do we observe at a peace manœuvre that far too many men rush at a trench to occupy it, and that at last they are packed up as close as possible together, sometimes even on the top of one another, so as to be much hindered in shooting. Besides which the trench is generally so narrow and shallow, that the cover obtained from it is a complete illusion, and the men's feet, to say the least, are completely exposed, being cocked up in the air behind them. If care is not taken to insist upon the trench being dug to a sufficient depth and width, the men will get a totally false idea of its defensive value. The same remark applies to the manner in which the men are allowed to crowd into it. I must, however, admit that many erroneous notions are nurtured at peace manœuvres, in consequence of the absence of casualties, and we gain the habit of cramming too great a number of men into our fighting line when we bring up the supports, whereas in battle these same supports are only brought up to make good losses, and to provide against any reduction of fire, the enemy's bullets only too effectually preventing any excessive accumulation of men in our trenches. All the same, we should never allow them to be overcrowded even in sham fights, and when we wish to represent the operation of bringing up supports, we should make them march up, fire a volley, and then go to the rear.

In order to keep up a proper fire from a shelter-trench I reckon that each soldier taking off his knapsack and placing it by his side as he must do in order to get at his reserve ammunition at need should have a clear front of two paces so as to be able to fire at his ease, that is to say, with as good an aim as possible; therefore no trench should contain more than one man to each two paces of front. Consequently, 500 men would suffice for a length of 1,000 paces, and a battalion on the war strength of from 800 to 1,000 men would be sufficient to supply the garrison of a line of this extent, including the immediate supports placed close in rear. Suppose then a brigade to occupy a shelter-trench from 1,600 to 2,000 paces in length (nearly an English mile), I would divide the front into two sections, each of which would be assigned to one of the two regiments, one of its battalions forming the guard

[1] This took place at about 2 P.M. A battery of mitrailleuses had approached close to the left flank of the Prussian line of artillery, and had in a few minutes completely silenced the heavy field battery, killing or wounding forty-five of the men and a quantity of horses belonging to it. Suddenly a large body of infantry threw themselves upon the defenceless guns, four of which they captured, only, however, succeeding in carrying off two, which the Germans retook when Metz capitulated.—TR.

and support of its part of the trench, whilst the remaining two battalions are écheloned in reserve behind and overlapping the outer flank.

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A flank attack tells with tenfold effect. I have often remarked this in war, not only on a large scale as at Königgrätz when we of the second army fell upon the flank of the Austrian fighting line, but also in the case of small bodies. For instance, at St. Privat, where we maintained for hours a heavy artillery fire against the troops occupying the positions of St. Privat—Amanvillers. The enemy had pushed forward some battalions, extended as skirmishers down the opposite slope. They inflicted such severe loss on my batteries that the Commander of the Army Corps sent six companies in succession, which were mostly distributed by "züge" in the intervals of the batteries, so as prevent the enemy's skirmishers from running in upon the guns as our men had done upon the Austrian line of artillery at Chlum—Nedelitz on the day of Königgrätz. But the French skirmishers remained at a distance of from 900 to 1,000 paces and continued to do us hurt, whilst our needle-gun could do but little against these scattered men at so long a range. Over and over again had the brave men of the Augusta Regiment wished to rush forward and free us from this annoyance; but as my orders were only to hold the enemy for the time, as, too, the infantry at the moment available was far inferior to the enemy in numbers, and would, had it advanced, have masked my batteries, which must, therefore, have ceased firing, I prevented this advance several times. Major v. R—— then suggested pushing forward a company to a hollow on the enemy's left. As this movement would not mask my fire I sanctioned it. Hardly had the company commanded by Captain v. R—— opened fire from a point in prolongation of the enemy's line of skirmishers before they all jumped up and rushed right away up the slope. Then we discovered for the first time what large masses of infantry were hidden in the furrows ready to pounce upon us. We estimated them at nine battalions in three lines, one behind the other. Our shells created great havoc amongst them as they ran up the slopes. As the general advance on St. Privat luckily took place directly after this episode my batteries found the way clear before them, and were able to gallop forward to the height to our right of that village. Thus, the sudden flanking fire of one company caused the retreat of nine battalions. Such flanking fire has a magical effect, principally because troops when suddenly assailed by it cannot help fearing that their retreat is threatened. But this effect will only be produced if the line of march leads directly upon the enemy's flank, or if the movement be favoured by features of the ground unnoticed by the enemy. A body smaller than a company will rarely be able to execute an operation of this sort with good effect.

Infantry against Cavalry.

A few words upon the action of infantry against cavalry. I might simply point to the events of 1866 and of 1870–71, for our infantry was always victorious in those wars. It then gained the conviction that infantry cannot be beaten by cavalry as long as it is fearless, and this was proved, no matter in what formation it received the attack. Numberless episodes in the battles of Gitschin, Königgrätz, Wörth, Sedan clearly demonstrate this, and need hardly be recalled to your memory. Should you indulge in a quiet laugh at my expense, and remind me that when writing about cavalry I asserted that it might even in these days gain advantages over infantry, and that it could not fairly be censured even for charging infantry still unbroken, remember, my good friend, that Prussian (German) cavalry will not have occasion to charge Prussian (German) infantry.[1] . . . .

[1] In this passage reference is made to the author's letters upon Cavalry, pub-

Since the war of 1866 our infantry has quite given up forming square to receive cavalry.[1] Immediately after the first victory of the battalions of the Body Guard Regiment at Gitschin, which when deployed in line beat off the most energetic cavalry charges, the order to give up forming square was issued to the whole army, and during the entire war of 1870–71 I do not think that there was a single instance of our infantry assuming that formation except in the case of the band of the 5th Jäger Battalion at the battle of Sedan. From the material point of view I believe this to be accounted for by the fact that in consequence of the long range of the infantry rifle cavalry has to go a much longer way round than formerly if it wishes to attack infantry in flank, so that a line of infantry has plenty of time to change its front for the purpose of meeting the attack. Lines of skirmishers have remained quietly lying down keeping up their fire, and even if the horsemen went clean over them they never got annihilated; indeed, their losses were not very great, for horses generally avoid treading on a living creature, doing their best to clear it, so that the skirmishers would jump up and fire on the rear of the horsemen, whose attack utterly collapsed when a little further on they encountered the supporting companies drawn up in line.[2] Even in 1866 lines of skirmishers often remained quietly lying down to resist cavalry. Thus, I have been told that when the 2nd and 3rd companies beat off the cavalry in front of the wood of Sadowa ("Prussian Staff History," p. 353), the skirmishers never stirred from their places except one man, who tried to rally on the support, and was the only one amongst them wounded. But for infantry to act in this manner in the fighting line it must be thoroughly trained, must keep perfectly steady, and must have complete confidence in its firearms. We remark that in order to carry out these principles whenever the "alarm" is sounded at field exercise it is now the practice for infantry lines and skirmishers to change front in the direction of the supposed approach of the cavalry, and to commence volleys or a rapid independent fire with the 400 metre sight. I have noted on occasions of this sort that a part of the line would wheel back in order to be on the same front with the remainder of it. I consider this to be a very

lished in 1884, and forming the first volume of the series to which that now before us belongs.—Tr.

[1] The 15th chapter of the latest edition of the German Field Exercise Book is, however, devoted to a description of the formation of square from double column and from line.—Tr.

[2] The affair near Mouzon on the Meuse on the 30th August, 1870, was a case in point, and one well worth studying, though but little noticed by military writers. It is described in pages 1089–1090 of the Prussian Staff History. After their defeat at Beaumont, the greater part of the troops engaged crossed the Meuse at Mouzon, the 5th Cuirassier Regiment remaining on the left bank to cover the retreat. The Prussian Fusilier Battalion of the 27th Regiment forming part of the pursuing force was formed with one company extended, its right "zug" being thrown forward, whilst the other three companies were in rear of it in line of company columns. The Cuirassiers charged the right "zug" of the skirmishers in rear. The Captain of the company made this "zug" face about towards the horsemen, and ordered the whole company on no account to close, but to receive the Cuirassiers as they stood, and only to fire when ordered. The Frenchmen charged home, but being received with a rapid independent fire at close quarters were repulsed with fearful loss, their Colonel, 10 other Officers, and 100 men being killed or wounded. The Prussian company did not lose a man, a few being slightly bruised by coming into collision with the horses. The remnant of the Cuirassier Regiment galloped away as hard as they could to the river which, in consequence of the bridges and fords being blocked by other troops, they attempted to swim, many men and horses being drowned in doing so.—Tr.

doubtful proceeding, particularly in the case of skirmishers, because the men who thus change their front must do so with their backs to the enemy; in fact, they must, to a certain extent, run away. Now, there is nothing so depressing as running away from an enemy, particularly when that enemy consists of horsemen galloping after you, for the human heart is so constituted as to be shaken by certain things. One of the most doubtful points about the square is that in order to form it you must run away from the cavalry, and men are apt to think that it is all up with them if they can't run fast enough. We have all read how quite of late years the Egyptian troops near Suakin, although armed with the best rifles, allowed themselves to be butchered in the most lamentable manner by savages armed only with spears after having got away from them by running into square. Another objection to this proceeding is that whilst running away you do not see what your enemy is about. The whole conditions are reversed if you run towards him. The very fact of your doing so imposes upon cavalry and frightens the horses; therefore, I always insisted that changes of front made under the circumstances alluded to should be executed only by wheeling forward towards the advancing cavalry, even though the new front might in consequence not be quite continuous, but broken somewhat into échelons. It seems to me that our infantry constituted as it is at present may entirely relinquish the formation of square, but that an infantry inferior to ours either from being newly raised and therefore without sufficient cohesion, or for the same reason not well trained in shooting and therefore without due confidence in its arm, may still be forced to resort to the formation of squares. English troops have, indeed, within the last few weeks moved in large squares against the wretchedly armed savages near Suakin. We can hardly judge from mere newspaper correspondence what were the grounds for this action on their part, nor are we yet able to express an opinion as to whether the proceeding was justified. I will now mention something which has often struck me at peace manœuvres as well as in war. I have already noticed to you when writing upon cavalry how commonly one remarks that when it intervenes in an infantry engagement and charges, the infantry on its own side, as soon as the cavalry masks its fire, looks on perfectly inactive though full of sympathy and of interest in its proceedings, instead of utilizing the moment when the enemy's fire is diverted from it to rush on and gain as much ground as possible, or to assist the task of the friendly horsemen by its fire at close quarters. As a general rule, infantry at such times gives way to a certain feeling of apathy and indolence, looking on with astonishment and curiosity at the spectacle before them. I have frequently represented such situations when directing manœuvres against a marked enemy, and although I have on such occasions made known beforehand my intention of giving the infantry an opportunity of co-operating with cavalry in an attack of the sort above alluded to, I have always found it necessary to ride up myself or to send some one for the purpose of urging the infantry to go forward. The reason assigned for this unwonted inactivity on their part is this, "they were not accustomed to do this, they had never done so." They had, in short, too little practice in combined action with cavalry. The action of infantry suddenly aiding the attack of cavalry by opening a rapid independent fire at close quarters is, however, most telling, and especially against hostile cavalry, because it comes so much as a surprise. With reference to this we need only read the account of cavalry combats during the battle of Königgrätz to be convinced how much the result of the great cavalry engagement was affected by the rapid advance of Prussian infantry detachments, which mostly pushed forward independently ("Prussian Staff History," p. 404—416). Wherever the masses of gallant Austrian horsemen were getting the best of it their onset was arrested by the unexpected fire which

assailed them from Stresetitz and Langenhof, and even the isolated skirmishing "züge" of Lieutenants Daum and Oldenburg, which had pushed forward beyond the sheep farm of Langenhof, threw a heavy weight into the scales, until the Prussian cavalry regiments coming up in succession became sufficiently numerous to drive the Austrian horsemen from the field. I can well imagine your smile and your remark, that in the case just described the fault of inaction, of which I have accused our infantry under similar circumstances, was not committed. I admit that in this one case it was so, but has this been always and everywhere the same? I pray you to excuse me from quoting the cases which have occurred in actual warfare, where blame has on this account been deserved. I do not feel myself justified in doing so. A cavalry duel is full of changes and chances, and the result is always uncertain. First one side, then the other will be in the ascendant. You require infantry to come up in order to give the first support to the successful cavalry, enabling it to hold its own until the batteries can unlimber on the ground which has thus been won, and the "cannon's opening roar" gives conclusive evidence of victory. Therefore both the sister arms—infantry first, artillery next—must hurry up to confirm the success of the cavalry.

Fire Discipline.

I have often remarked how much fire discipline is weakened in action when the element of danger makes itself sensible. Troops imperfectly trained do not aim, they do not even fire, they only let off their pieces. Even before I ever saw a shot fired I was told by men experienced in war that infantry soldiers must have attained to a certain degree of proficiency if they could be got to put their rifles to the shoulder when firing. At the battle of Königgrätz I had a very near view of troops keeping up a wild fire with their rifles pointed straight up into the air. I was galloping in advance of my batteries to choose the next position for them, accompanied by my Major, some Adjutants, orderlies, and trumpeters, when in ascending a hill I found myself within twenty or thirty paces of a body of the enemy's infantry, about half a battalion strong, which had just evacuated Chlum, was making for Nedelist, which lay on their left, and found themselves between some of our more advanced infantry and my line of artillery. They were as much surprised at seeing us as we were at seeing them, and took a group of ten or twelve horsemen for the staff of a body of cavalry advancing to attack. At all events, they began firing wildly, and I saw most of their rifles pointed straight up into the air. Only one of these men took aim, and he shot the Major's horse in the body just as the rider was turning him round to retire, for a small party of horsemen such as we were could do nothing against some 500 foot soldiers, so that we rejoined the batteries as fast as we could in order to make them open fire upon these troops. But how much more trouble is required before we can train the infantry soldier to pay attention to orders and signals during all the excitement of battle, to observe the object to be aimed at, the sight and mode of firing to be used, and to cease firing when the specified number of rounds has been expended. Everyone knows, even those whose experience does not extend beyond field firing practice on the ranges, that without strict attention to orders and signals the effect produced by our costly breech-loader is simply nothing. Yet much has been done to simplify the use of the rifle. First and foremost, we must note the low trajectory, thanks to which a single sight may be used (as long as you aim at your adversary's feet) from the time he comes within the range, where, owing to intensity of excitement, independent fire is alone practicable. But if, as we have remarked, soldiers must already attain to a certain pitch of fire

discipline before you can be sure of getting them even to bring their rifles to the shoulder in battle, how much greater pains must be taken before you can get them to take aim? In other respects also the excellent instructions which proceed from our School of Musketry make very great demands upon the self-control of the soldier when under the powerful excitement of battle. I allude particularly to the limiting of the number of rounds expended, and to the periodical interruption of the fire when engaged in rapid independent firing, that is to say, in the immediate neighbourhood of the enemy. You are asking a great deal of a man who is being shot at when you tell him to cease firing for a while. I have often remarked how difficult it is with artillery to stop the firing when advisable in order to let the smoke clear off so as to see what is going on. When firing once begins, men get easily out of hand unless restrained by an iron discipline. If this is true with regard to artillery how much stronger must the case be with regard to infantry, in which the number of firers is so much greater? It is but human nature that a soldier should derive some comfort from the noise made by his own gun when it goes off. The more raw the soldier the more will he be inclined to "shoot himself into courage." During the first campaign in which I took part, I was present at a little outpost skirmish, after which a Lieutenant inspected the men's pouches. The older hands had only fired from three to five rounds each, whilst every recruit had got rid of over twenty. Taking such facts into consideration we cannot help doubting whether the order "Five rounds rapid fire" when given at close quarters, say under 300 yards, will be attended to. This order or caution was only introduced into our Service after the last campaign, and has not yet been tested in action. The group volley ("Schwarm-Salve") is another aid to fire discipline introduced since the last war.

It appears to me (artilleryman as I am) a very good means of restraining infantry fire, so that it should tell with concentrated force, as does a salvo from well-commanded batteries. This system answered very well at peace manœuvres when the total daily expenditure of ammunition was limited to from ten to thirteen rounds a man, and where the comparatively small charge of the blank cartridge made less noise: but when it came to heavy firing of ball cartridge at field practice, the case was very different. Officers found it necessary on account of the greater noise to tax the strength of their voices much more in order to make themselves heard and obeyed, in consequence of which most of them were so hoarse before the end of the drill, that no one could understand what they said. This is not astonishing when one reflects that a single "zug," when extended, occupies a wider front than a whole company in close order, and that the Lieutenants are on foot; therefore at a disadvantage in comparison to the Captains and Field Officers who can shout over the heads of the whole line from their exalted positions. The employment of two or three different sights at the same time by different portions of a body of troops, as enjoined under certain circumstances, seems to me of even more doubtful application in consequence of the difficulty of defining what you want, hence of your wishes being attended to, and there will rarely be time enough to ascertain that directions are properly carried out. However, this is a matter of less importance, because the use of different sights at the same time is only recommended for long ranges, at which firing is but seldom carried on. It is only when particularly compact and deep bodies offer themselves as marks (for instance, masses of men defiling over a bridge or such like), that such means are resorted to. These are merely exceptional cases, which produce no decisive results. However just in theory all these ideas may be which emanate from our School of Musketry, however useful too they may have proved in directing attention to the study of our rifle and of infantry fire, there still lurks behind them the danger of being betrayed by them in time of peace into illusions which would prove deceptive

and therefore discouraging in time of war. It appears to me, then, that a line of skirmishers in which during the heat of action every man still pays sufficient attention to the Lieutenant's whistle to cease firing when ordered, to look to him for an example, to jump up and run forward at his signal, or at his call to change his aim or the sight which he is using, give evidence of a high standard of fire discipline. Therefore one should not attempt too artificial combinations, but rather spend the time in repeating the simple routine hundreds and thousands of times until it has become a second nature to the man. Thus and only thus can you feel sure that what you require will be done before the enemy. For, "in warfare all is simple, but the simple is also difficult," says Clausewitz. My wish that the exercises of the company should be confined to the simplest and most elementary subjects, avoiding all complicated tactical movements and every kind of strategical combination, does not however prevent their being conducted in accordance with a tactical idea, as we say, smelling of powder and ball. On the contrary, I should like the Captain, as soon as he has got his company well in hand, to begin at once to handle it and to make a practice of doing so as long and as often as possible, just as he thinks he would handle it in presence of the enemy. He may, for instance, always relieve the monotony of the march to and from the place of exercise by moving in a fighting formation suitable for attacking an enemy supposed to be in front of him. When on the line of march, too, an opportunity may often present itself for representing a short skirmish or an attack, whilst the rest of the time may be employed in thoroughly imbuing the men with the elementary principles of reconnoitring duties whilst on the march. Thus may we gain time, and time is money. When in command of a Division I contributed to its increased efficiency in field duties by issuing an order that no body of troops should move either to the field of exercise or in route-marching except in order of battle and with a tactical object in view.

Supply of Ammunition to Troops under Fire.

The timely supply of ammunition to troops in action is one of the most difficult services in war. Of what use is the most scientific strategy on the part of the General, or the most heroic conduct on the part of the troops, if at the most critical moment the latter are exposed without defence to the attacks of the enemy? During the war of 1866 I once experienced the bitter feeling of being without a sufficient supply of ammunition at such a time. During that war there were other corps of artillery worse off than mine in this respect. This led me to give much attention to the question of keeping up a constant supply of ammunition to troops in action.[1] My position during the war of 1870–71 made it my duty to provide for the wants of an army corps in this respect, and I then brought my ideas upon the subject to the test of practice. Assisted as I was by the indefatigable zeal of my subordinates, I succeeded, notwithstanding the great exertions required of us and the great difficulties to which we were exposed, in making such arrangements that there was no instance of any body of troops in the army corps being in want of ammunition. In both wars our infantry expended but little. During the whole campaign of 1866 only from five to eleven rounds a man. In the war of 1870–71, whenever I had occasion to send to the rear all the five artillery ammunition columns empty, two infantry

[1] Prince Hohenlohe commanded the "reserve artillery" of the Guard Corps in the war of 1866, and the whole artillery of the same army corps in the war of 1870–71.—Tr.

ammunition columns at the outside would have to accompany them to be replenished.

My experience has been hitherto limited to the supply of artillery ammunition, but the principles for both arms are the same, and it will be well to make up our minds betimes as to the proper course to pursue, for our infantry will expend a great deal more ammunition in future, as it can fire now at longer ranges than before. The superiority of our small arm was the cause of our small expenditure in 1866; for, in consequence of it, infantry engagements were not protracted. In 1870–71 our rifle did not carry half so far as that of the French, and our artillery had consequently to share in doing a good deal of work which, with the French, devolved entirely upon the infantry. In future wars our infantry will be able to shoot at as long ranges as that of the enemy, and our expenditure in small-arm ammunition, supposing conditions to be otherwise identical, will be at least doubled. But the conditions will differ in this respect, that a protracted fire will often be maintained at the longer ranges, and when you come to the shorter distances, supposing both lines to be under cover, resort to the bayonet will be deferred longer than formerly, whilst the assailants endeavour meanwhile to break the enemy's resistance by weight of fire, and victory will often fall to the side which has the last round left. If our infantry never experienced a want of ammunition in 1870–71, the same cannot be said of our opponents, who could even then fire as far as we can at this moment. When I took post with my batteries on the heights to the right of St. Privat, the enemy gave me time to establish myself there thoroughly before he took the offensive against me from Amanvillers. An aide-de-camp of General Ladmirault told me some years after, that as soon as I appeared on the heights, he was sent by his General to two infantry regiments with the order for them to take my batteries at once. But neither regiment had any cartridges left. The aide-de-camp had to ride back for other troops, and before they arrived we had taken our bearings, had ascertained the ranges of certain objects by trial shots, and had strengthened our line of guns so that when the infantry at length assailed us, they melted away under our shell fire. We have no authentic information as to how often the French may have been out of ammunition; but we know that Bazaine excused himself for not attacking us on the 17th August by his deficiency in this respect. Many other instances of indecision on the part of an army which had always hitherto been considered the representative of the offensive element in war, may perhaps be attributed to this cause. Many believe the excessive expenditure of ammunition on the part of the French and the occasional deficiency thereof which ensued to have been caused by want of fire discipline which certainly does contribute to waste, and it cannot be denied that this was frequently the case; for the French, in consequence of experiments made on the rifle ranges and at the camp of Châlons before the war, expected great results from fire at 1,000 metres, and made men fire while running with the rifle held horizontally to the hip, a practice which proved almost useless at Sedan. Good fire discipline will to a certain extent limit the expenditure of ammunition, but we must not expect too much from it. It will, indeed, prevent fire from being opened at too long ranges. It will also enable Officers to control the amount of shooting at the extreme ranges at which any at all is permitted. This will be especially the case as long as it is possible to fire group volleys, and thus in a way to watch each cartridge. But when the two fighting lines get near enough to one another for each skirmisher to see clearly the very man who is aiming at him, when casualties are becoming numerous, when the skirmishing sections are losing their leaders whose successors have not yet established their authority, at such moments as these a furious fire begins to "roll" (as the saying is amongst those who have expe-

rienced it), first of all along the ranks of the leaderless sections and soon along the whole line. Then all control over the expenditure of ammunition ceases, for the voices of the Officers are no longer audible above the din of battle. From that moment individual fire reigns supreme. I do not intend to question in the very least the self-sacrificing valour of our excellent infantry soldiers, but still there are amongst them some who can only keep themselves up to the scratch by much shooting, for no one likes being killed, and most of them feel the need of keeping down the fear of death by great noise, which acts as a counter-irritant; so that the crack of the rifle must be pretty constant to counteract the numbing effects of fear until you reach the point where the cheer and the charge are allowable. To this feeling are added those of anger and revenge, inspired by strife when friends and comrades are falling around one, or when perhaps one feels the smart of a wound. I could name a certain Colonel who got a slight hurt and became so infuriated that he took up the rifle and ammunition of a wounded man and would not go to the rear to have his wound dressed till he had "knocked over three of those rascals" who had laid their heads together to do him harm; he accomplished this, but at the cost of three more wounds to himself. Therefore, when the fire fight is in full swing, when independent firing can be no longer checked, you must just put up with it; you can no longer do anything to save your cartridges. This is a factor with which you have to reckon, for it makes itself felt irresistibly without and even notwithstanding any interference of yours. Even with artillery it is very difficult to keep fire fairly within bounds after it has once got hot; yet it is much easier to watch every shot, for no single man can fire a gun at pleasure. With infantry, on the other hand, it is utterly impossible to exercise any check when the stage of hard fighting, man to man, has been reached.

At the same time this is the very stage of offensive action, particularly on open ground, when it is impossible to bring up a supply of cartridges. If, therefore, you do not wish to be exposed to the risk of your attack failing from want of ammunition, you must try to provide some other remedy for the excessive expenditure, and the only remedy is this: not to commence your attack until it is evident that the enemy's defensive power has been shaken by your artillery fire, and further, when you do attack, to carry it out with such energy and with so thorough an employment of your supports, and if necessary, of your second line, as to shorten to the utmost the duration of rifle fire. This will, however, only be possible, if the plan of the attack has been well considered, and the combined action of the two arms has been pre-arranged, as was the case at Villejouan (referred to at page 773).

Bodies of troops, however, which have in exceptional cases been obliged to fire at long ranges (1,000 to 1,100 metres), should at once receive a fresh supply before advancing, however small may have been the expenditure. Further, every interval of repose should be utilized in completing the ammunition, the principle of, as far as possible, keeping every man constantly fully supplied being rigidly adhered to, as you can never tell what demands may be made upon you at each succeeding moment. And you must not wait for an actual cessation of hostilities, but you must also make the most of occasions when the enemy is only keeping up a distant fire upon you. The combat of Villejouan furnishes a good example of this. After our fusiliers had carried the place, great masses of the enemy advanced to retake it. The fusiliers had meanwhile completed their ammunition, the wagon-horses being however shot in bringing it up, which proves that there was no positive cessation of fire at the moment. In my opinion our ammunition wagons are, according to established custom, kept too far back. I am not aware of any positive regulations on this subject. There is a great dread of

exposing them to fire, just as formerly artillery wagons were kept too much in the background. What does it signify if one of them is occasionally blown up? Much better this than that troops should be exposed to the risk of annihilation owing to want of cartridges. And if now and then a pair of horses comes to grief the misfortune is not very great. You will take measures to replace them at the end of the action, and meanwhile you will rejoice at being well supplied with ammunition.

The wagon-horses of the fusiliers of the 76th were well expended at Villejouan. One often reads fearful stories of the horrors witnessed when a powder wagon blows up, and how one should therefore avoid exposing both small-arm and gun ammunition wagons to fire, but I know by experience that the risk is not so great as might be expected, and that an explosion of this kind is not so very horrible. At St. Privat, all my batteries placed their first line of wagons near the guns by order of Colonel Scherbening, so as to be able to make good at once each round expended. There they remained the whole afternoon till night-fall under artillery fire, and from 2 till 5·30 under rifle fire at from 900 to 1,000 paces distance. Not one of them blew up that day, though now and then a gun-limber exploded. One such explosion occurred just as an Officer was looking into the limber for some purpose. He tumbled down and was hard of hearing besides having a headache for three days after, but he is all right now and employed on the General Staff. So that when I read that during the cannonade of Valmy in 1792, the whole of Dumouriez's army was thrown into disorder because two powder wagons blew up, I simply don't believe it. A round of shrapnel, or a common shell falling into a column, does three times as much mischief as the explosion of a powder wagon. A suggestion has been made to me as to a mode of providing against a premature want of cartridges when infantry is taking the offensive, which is that, before the action commences, each man should be supplied with some twenty extra rounds to be placed in his coat pockets. This idea is no doubt good and practicable whenever there is time enough to carry it out, as, for instance, on the occasion of an attack such as that on St. Privat long prearranged, but in encounters such as those at Spicheren and Wörth, time will be wanting for the purpose, or else you may lose some good opportunities of injuring the enemy by employing your leisure in this way.

There is one thing more to be noticed which stands in the way of a proper economy of ammunition, namely, that the men are not accustomed in peace time as they should be, to attend to it. An ammunition wagon is rarely attached to infantry at peace manœuvres, for the soldier can easily carry on his own person the stock of cartridges required for the whole time.

In the VIth Army Corps military train horses have been sometimes supplied so as to practise bringing up ammunition in action. This gave an opportunity of observing how rarely these vehicles are thought of in peace time. I had constantly to call attention to this, for the empty, helpless carts were always getting in the way of the troops, and were looked upon as mere useless impediments. Those in charge of them never received any timely orders, so that one might be sure that if any battalion, burdened with an ammunition wagon, had to retire before the enemy in action, the wagon was certain to follow in rear of it, and thus to get between it and the enemy. I therefore hit upon the idea of filling the battalion wagons with the men's breakfasts at peace manœuvres, and of representing the supply of fresh cartridges by bringing up the rations, for I felt sure that the whole battalion would then be thinking of its wagon, particularly if I made a rule that should the enemy capture it, he should have the right to devour its contents. Unfortunately, this idea of mine could not be made to fit in with the commissariat arrangements for supply.

It is, however, very desirable that ammunition wagons be allotted to battalions at all manœuvres, so that those who direct the operations may accustom themselves to give timely orders for their disposal, and may constantly bear in mind the question of ammunition supply. There is no other method of giving this important training than that of obliging Officers to think daily and hourly about it. General instructions on the matter are of no avail. The special situation varies in each individual case. Every battalion commander should, however, be thoroughly determined to take all possible opportunities of making good even the smallest expenditure of cartridges, so that the supply, both in pouch and knapsack, be kept always complete, and, in fact, that the wagon supply be consumed before the store in possession of the men is expended. It was only by acting on this principle that I prevented a deficiency of gun ammunition in 1870–71, making a rule that the wagon supply should be used up before that in the gun limbers was touched, by which means the latter was always available for any sudden emergency. I said just now that general directions were of no avail, I will go further, and maintain that even general orders are of no use, unless all those whose duty it is to have them carried out take great pains to make people think of them. I can hear you say "the devil must have his hand in it if this is not the case." But I assure you that the devil does have his hand in it, for it suits his little game. It is of no use afterwards to say "Oh! but the most positive instructions were given, why did the battalions not follow them?" The battalions are the sufferers, the Commanding Officers who received the special instructions are no more, and that is why the sin of omission was committed. Give heed to this anecdote. Before our departure from Berlin, in 1870, an order was issued from the general head-quarters at my suggestion (as I had to arrange for the despatch of the reserve ammunition), that in every action the Commander of the Army Corps artillery should make known to the different Divisions the situation of the ammunition column, and that the Division Commander should, after each battle, report to headquarters that his battalions were complete with cartridges, or if not, should account for any deficiency. On the day of St. Privat, I made it known to the Divisions that the infantry ammunition columns were at Batilly, where battalion wagons might be filled. Next morning, however, no reports came in. I rode all round the bivouacs and ascertained that very few of the Majors or Adjutants who had read the order in question were to the fore, most of them being killed or wounded. No one was to blame. I rode from battalion to battalion and saw to the matter myself, for I could not hold the Ensigns and young Lieutenants whom I found on that day in command of some of the battalions responsible for the want of obedience to orders, and on that account I made no report of the irregularity to the higher authorities.

There is one thing which I wish to call attention to and which I have learnt by experience. Care must be taken in regulating the supply of ammunition to steer clear of all pedantic adherence to form and red-tapeism. When troops are fighting they don't like having to furnish requisitions and estimates. Forms A and B are held in horror.

When a man is readily venturing his life from moment to moment at the call of honour and duty, he thinks it hard to be required to render an account of expenditure, when perhaps he may within the next half hour make a settlement in full with his life's blood. And even if a corps should render a false return to the amount, say, of 10,000 rounds, it could be done without detection, merely by showing 10,000 extra cartridges expended. But who would ever dream of embezzling cartridges in time of war? What would he do with them? Therefore you must, when in the field, give up controlling your expenditure of ammunition by double entry. Having myself, in former

campaigns, experienced the useless annoyance and inconvenience to which troops are exposed by the demand for periodical ammunition returns, and having come to the conclusion that it only delays the issue, without being any real check upon consumption if ammunition is refused except upon the production of a requisition accompanied by a return of amount issued, I inserted in the order above quoted, that every soldier belonging to the Army Corps, who came during an action to an ammunition column with cart or wagon for cartridges was to have them, forms of receipt being kept ready on which were to be entered, from the information given by the applicant, the company, battalion, and regiment for which the ammunition was required, the soldier signing or putting his mark to the document. I met the objection that such munificence would cause loss of ammunition, by replying that it was better to lose 10,000 rounds at once by errors of reckoning, than to let a single company be in want of ammunition when in action through pedantic adherence to form.

But even this process did not answer in all cases with the artillery during the last war, and in future the demands of infantry will be equally great. It will then doubtless be necessary for ammunition columns to detach wagons to different parts of the fighting line, and we must make up our minds to this. Troops actually engaged must make a point of completing their ammunition at all times without waiting for orders, whenever they get a chance of doing so, whilst the leaders of ammunition columns following out of fire must consider it a sacred duty to meet the troops to which they are attached half-way, and to furnish them with supplies, also without awaiting orders which the General might have neither time nor means to send in the heat of battle.

Most especially must this be attended to at the end of every serious engagement and after every assault, when the din of battle, which has been for some time waging louder and louder, ceases all at once as if by a sudden blow. Then every one in charge of ammunition must hurry to the front, and do his utmost to reach the troops which he has to supply.

Attack across open Ground.

Having been asked to give a detailed account of the mode in which I think infantry combined with artillery should conduct an attack on a village across open ground, I will endeavour to do so, although it is always somewhat unsatisfactory to attempt laying down rules as to details which must needs be modified in each special case, and may indeed exceptionally be quite set aside. In order to perform my task, I must begin by comparing the material effect of infantry with that of artillery, in doing which I must first of all observe that the results of target practice in peace time may lead to very false conclusions, for the conditions of war are very different. In the first place the uncertainty as to the range naturally reduces the effect of fire, especially that of infantry, at distances where the trajectory rises above man's height. It is true that trial shots may be fired, but it is very difficult at certain distances, even at practice in peace time, to observe where rifle bullets strike, and in war perfectly impossible if the enemy is firing, on account of the smoke. The assailants of a position are as a rule unacquainted with the distances, unless, as in the case of Le Bourget, the place is well known. But even then you cannot be sure of the effect of your fire, the strength of powder differing so much according to the degree of moisture in the air. I have known instances which I have myself verified of the difference amounting to as much as one-tenth of the range. This does not affect artillery as much as infantry, because the bursting shells are much easier to see, and give the best indication of how one should aim, the question of distance and of the variation of powder strength being equally cleared up by observation of

their flight. I once had an opportunity by assembling the artillery under my command for target practice, of giving both arms an idea of how much influence want of acquaintance with the distance of the objects fired at, when that distance is considerable, has upon infantry shooting, for I made both arms fire from the same base at similar marks. A battery of six guns first fired on an infantry target, representing a company in extended order, then against an artillery target representing six guns. A company of infantry made up to the war strength went through the same practice at the same time, only reversing the order. Distances were unknown to the firers, being between 1,000 and 1,100 metres. Sighting, nature of fire, and with the artillery choice of projectiles, were left to the Captains. The result was very striking. The battery made thirty times as many hits on the infantry target, and a hundred times as many on the artillery target as the company; moreover, and this is of material consequence, the time taken, the total cost and weight of ammunition expended, were the same in both cases. The conclusion to which I came is that we are guilty of a gross waste of ammunition if we allow infantry to fire up to 1,000 or 1,100 metres when artillery is available. If you next picture to yourself a duel between infantry and artillery, the result will be still more decidedly in favour of the latter arm, because as the fight goes on, the fire of the former is being constantly reduced by casualties, whilst the six guns will remain in action to the end, although a certain number of men and horses have fallen. But the case is much altered at the shorter ranges, for the effects of artillery fire do not increase below a range of 1,000 to 1,100 metres, these being the distances at which gunshots tell with crushing effect, whilst infantry fire becomes more and more effective the nearer you get. Our experiments proved that it was only when you get within 500 metres that the effect of infantry fire approaches that of artillery, and that within from 200 to 300 metres the two arms are on equal terms. When you take into consideration the excitement of battle, the comparison will be still more to the disadvantage of infantry, for when the soldier's blood is heated the weapon will shake in his hands, whereas the cannon has no nerves. It will also sometimes happen, on the other hand, that excitement will trouble the vision of him who lays the gun, or otherwise disturb the service of the piece. Some batteries, which had fought very long and gallantly at Königgrätz, reported that as the firing went on their shell fell from 300 to 400 paces short, and they attributed this circumstance to fouling. Our experts racked their brains over this, for no such thing had ever been noticed in peace time during the experimental trials of the durability of guns, at least at all to the same extent. My belief is that the gunners omitted, through excitement, to examine the tangent scale after every shot, and that it gradually fell lower and lower, owing to the shock of each discharge. The fouling of the guns was not observed to produce a similar effect in my batteries, but I have noticed that their practice was at times affected by the enemy's fire, and that when this was very telling, some shots were badly aimed on our side, some indeed being fired without aim, so that I had to take strong measures to get the gunners to resume a steady and orderly service. This is possible with artillery, but it is utterly impossible to exercise the least control over the aim of the infantry soldier, particularly when under hot fire. These considerations suggest to me the reason why the Field Exercise Book of March 1, 1876, only permits rifle fire beyond 500 metres when directed on large objects. If an alteration was afterwards introduced, making the distance fired at and the nature of fire dependent upon the rules laid down in the musketry instructions, the reason for this alteration was probably the desire to keep our system of field exercise in harmony with any fresh regulations as to distance rendered necessary by fresh improvements in firearms. Up to this time the increase since given to

the range and accuracy of the rifle is not so remarkable as to render any fundamental change in the regulations requisite. I think, then, that I do not err in fixing the distance at which one may, as a rule, allow infantry attacking a village in combination with artillery to open fire upon its outskirts at 500 metres. It is very important that infantry should not commence firing too early, lest it run the risk of being left without ammunition just at the most critical moment. It is taken for granted that on all such occasions the defender is also provided with guns, so that an artillery duel will be the prelude to the infantry attack. Only when the batteries of the assailant have succeeded in mastering those of the defender, which must be accomplished at long range, only then will they be at liberty to turn their attention to the outskirts of the village, approaching it as close as can be, so that their fire may produce the utmost possible effect upon the garrison; that is to say, as close as the range of the infantry rifle will permit, or something over 1,600 metres. The artillery will therefore unlimber at from 1,600 to 2,000 metres from the village, and open fire upon its border. The infantry will meanwhile approach to within 500 metres of it, taking care not to mask the fire of the guns, thereby losing the advantage of their support. The line of skirmishers will then add their fire to that of the artillery, which will next move on under cover of the infantry to the decisive range of from 1,000 to 1,100 metres, whence its effect will be crushing. If there be more than one battery in action the guns will advance in échelon, accompanying the infantry up to its last position before the assault, half of them keeping up their fire, while the other half move forward. There will thus be no intermission to the cannonade. Are you surprised because I, who am an artilleryman, require batteries to move up to within 1,000 or 1,100 paces of a village occupied by infantry, in days when shrapnel ranges beyond 3,000 metres, and when its effect at 2,000 metres is murderous? Well, I require this not only from the gunner's standpoint, but also from that of the foot soldier. Firstly, because at 2,000 metres it is difficult to observe where your shots strike, hence at this range the effect of your fire is questionable. So much for the artillerist.

Again, the infantryman will be apt to expect the guns to support his advance until he makes his last rush, but this cannot be done with safety to him if they remain at 2,000 paces from the enemy, for at this distance it is not easy to distinguish friend from foe when the two sides are approaching close to one another. Badly aimed shell or shrapnel bursting prematurely may endanger your own infantry. Artillery should therefore, if kept back, cease fire when the infantry gets within 500 metres of the point attacked, but if it approaches to within 1,000 or 1,100 metres, it may continue its fire in security until the infantry has entered upon the last hundred paces of its final rush, for at this close range the aim of the gunners will be so certain that no accident will be likely to happen. Moreover, it is not encouraging to infantry when at very close quarters with the enemy, to see their own guns kept back a mile to the rear, whereas it is enlivening and comforting to hear them thundering away close at hand at such critical moments. Those only who have heard the cheers which infantry give the batteries which have stood by them in the fight, can form a full idea of the moral effect produced upon the former by the support of the latter.

You will perhaps object that artillery will no longer be able to approach within 1,000 or 1,100 metres of a village occupied by the enemy, for infantrymen, firm believers as they are in the powers of their arm, feel confident that at such a distance they can annihilate batteries, and I myself recommended a few lines back that the first position for the guns should be chosen beyond rifle range. But I can state from experience that infantry fire is not annihilating at the distance named. The well known soldier's song is in the right when it says, "It is not every ball that hits," and this assertion is

corroborated by a comparison of the number of casualties with that of rounds expended. I remained with my batteries in position before St. Privat, from 2 to 5 P.M., during which time three battalions of French infantry were extended in the furrows of the arable land in front of us, at from 900 to 1,000 paces distance, keeping up a constant fire upon my guns and upon nothing else (not to mention six other battalions in second and third line). We suffered very considerable loss, but no gun was for a moment silenced during those three hours in consequence of rifle fire. Whenever one of the guns was silenced for a few minutes it was in consequence of the enemy's artillery fire, which occasionally smashed a wheel or something else. When the batteries were required to advance with the infantry between 5 and 6 P.M., only three out of eighty-four guns remained behind for a time, being at the moment under repair. All other damage had been made good in position under the enemy's rifle fire.[1] The loss inflicted by the latter will be sensibly diminished if the enemy's infantry are vigorously opposed by your own skirmishers, against whom in that case their fire must be principally directed. On that account I recommend that the guns be kept out of effective rifle range till your own battalions are able to support them with a heavy fire. The war of 1870–71 completely dispelled the old prejudice against allowing artillery to enter within the limits of rifle fire. I do not see why the gunner should be exposed to less danger than the foot soldier. Moreover, the former does not under similar conditions run the same risk as the latter. If you count the men who stand on the front of 120 paces which a battery occupies, you will see that those in a strong line of skirmishers of equal extent are much more closely packed, and may therefore naturally be expected to suffer more loss. Moreover the bullets which at field firing in peace time strike guns, limbers, horses, &c., count amongst the hits, whilst on service they make but little impression upon the men, and do them no harm. Artillery may therefore when needful expose itself to infantry fire. Why do I not then require batteries to accompany infantry to close quarters even up to 500 metres of the enemy? My reason is that you cannot always avoid making guns fire over the heads of friendly infantry, and this may be done without risk when the latter are below the highest point of the shell's trajectory, but not when immediately in front of, or 100 paces in advance of, the guns. Besides, notwithstanding all technical improvements, there will still be now and then a case of a shell bursting in the gun, and spreading at once like shrapnel. At the bombardment of Montmédy I was standing some 800 or 900 paces from my field batteries, and straight in front of them. Many defective shell were fired, the splinters of which hopped along to within 200 paces of us, so that at 600 paces one would not have been safe from them. It is therefore advisable for the sake of the infantry that the batteries should keep some 600 metres behind the point at which the former makes a halt of considerable duration to open fire. When arrived at its advanced positions of 1,000 or 1,100 metres from the enemy, the guns need not at once cease firing when the last rush commences, lest they should draw the attention of the enemy's reserves within the village to the fact that a fresh stage of the combat is beginning,

[1] On the same afternoon four batteries of the VIIth Army Corps crossed the causeway leading from Gravelotte over the valley of the Mance under a fearful fire of artillery and infantry. Two of these batteries had to retire with great loss and without unlimbering, but the other two came into action after crossing the causeway, finding some cover within 700 yards of the French positions and in the foremost ranks of the Prussian infantry. Here they maintained their ground and kept up their fire for some hours till the end of the battle under a heavy fire of guns, mitrailleuses, and rifles, one of these two batteries losing altogether 37 men and 75 horses (see Staff History, p. 813).—TR.

but they may, after the cheer of the foremost line of assailants when about to charge, throw a few rounds of shrapnel into the interior of the place, so as to disquiet the reserves, without any fear of endangering their own friends, since it will require some time for the latter to get far enough forward to come under their fire. It is really of the greatest importance that artillery should keep up its fire until the infantry has broken into the place, otherwise the whole advantage of your preparatory fire may be lost. The opposite practice, however, answered very well on the day of Sedan, when we carried the Bois de la Garonne, although our guns ceased firing before the infantry commenced their attack; but on the other hand I witnessed the failure of an attempt on a village, the border of which had been previously so fiercely cannonaded that the defenders ran out to the flanks and hid themselves. Our artillery was then ordered to cease firing, because the General in command did not like the guns to fire over the heads of our own troops, and after this only, the infantry advanced. Meanwhile all the defenders had returned to their posts, and the attack failed in the same manner three times in succession. You must excuse me from naming time and place, for I should be sorry to impute blame to an Officer whom, on the whole, I esteem greatly. So much for the support which infantry has a right to expect from artillery in attacking a village; it must at the same time take care not to obstruct the fire of the latter when getting to close quarters. How should infantry act in the special case before us? I think when the nature of the ground admits of it (and we are assuming that the attack has to be made across open country), that the battalions should be formed in order of attack before passing the position occupied by the guns at 1,600 or 2,000 metres from the village: that is to say a strong line of skirmishers (not less than two züge per company) should be extended, with supports in open line. The whole of the second échelon would be in open line, as I take it for granted that the enemy's guns are already silenced. It stands to reason that the touch will not be given up, either by supports in the first échelon, or by the companies in the second, until within range of unaimed rifle fire. The companies of the second échelon may with advantage be made to overlap the flanks of the first échelon. . . . . If the batteries have found room for a position on one flank of the infantry, which I will call the inner flank, it will be found advisable, and it will be at the same time quite in keeping with our regulations, to échelon the supports of the skirmishers and the companies in second line chiefly on the outer flank, for the guns will protect the inner flank from surprise, at the same time having the most powerful effect upon the portion of the enemy's position in front of that flank, so that it is well on all accounts for the assailant to concentrate a strong force upon the other flank. As for the distance of the supports and of the second échelon from the skirmishers, the regulations recommend this to be modified according to the nature of the ground, being greater in open country, but reduced as much as possible when cover can be obtained. As I am now treating of an advance across open ground, we must assume in this case the greatest allowable distance. At 200 metres supports can exert some effect on the flank of the skirmishers by firing volleys at need, if placed so as to overlap the outer wing. If this distance is preserved, when the skirmishers, having arrived within 500 metres of the enemy, commence their attack by opening fire, supports will be at 700 metres, the companies of the second échelon at 900 metres, where they will not suffer seriously if they lie down.

The following measure cannot be sufficiently recommended, although rarely practised in peace time, and therefore, from want of habit generally ignored in war, namely, that when infantry are passing near guns in action, they should always get the range from the gunners, who will already have made it out. For, however much practice you may have had in judging distance,

you will be much deceived by effects of light and by the state of the atmosphere, and it is only natural that you should think an enemy who is shooting at you to be nearer than he really is. I must acknowledge errors into which I, but not I alone, have fallen. When leading my batteries on the day of Königgrätz through Jeciceck up to the first position, after crossing the Trotinka River, I rode forward to choose my ground. Arriving on the flat plateau with the division and battery commanders, we all agreed in estimating the distance of the Austrian artillery from ourselves at 2,500 paces.

It was in action on the now historical hill of Horenowes. Our first shell proved the range to be much longer than this, and as it was only after our fourth shot, with 4,000 metres elevation, that we just reached the enemy, I limbered up and moved to the next swell of ground 2,000 paces in advance. This shows how artillery can correct its aim, whilst for infantry it is almost impossible to do so at the longer ranges if the enemy is firing, as they cannot see where their own bullets fall. Mistakes are also made in the other way, particularly if snow-flakes falling between yourself and the enemy obscure your vision.

During a small reconnoitring skirmish near Nübel on the morning of February 10th, 1864, I was one of a group of ten or twelve horsemen for some time near a house against whose walls the bullets struck flying over our heads. These were fired by a Danish flank patrol consisting of three men posted in a clump of trees. We were astonished at the long range of the enemy's rifles, as after a good deal of discussion we put the distance at 800 paces. When the Danes had been driven away we had the distance paced, and found it to be only 240 paces. The enemy must have made the same mistake as ourselves, for all their shots were aimed too high. It stands to reason that errors of this description render all your fire of no effect, the only result being that you give the enemy confidence. . . . All attempts to prevent error by the use of range-finders have hitherto failed in action owing to excitement and to frequent change of position.

Artillery fire still continues to be the best and quickest range-finder, all the more so because, as before noticed, the trial shots not only serve to find the range, but also at the same time to show what allowance should be made for the effect of the weather upon the powder. I think that if the artillery fire directed on the borders of the village has had due effect, it will not be necessary for the skirmishers in going up to their first offensive position, whence they will open fire at 500 metres from the enemy, to do so at the double, for the defenders will probably be so fully occupied in getting shelter from the shell and shrapnel which will be falling amongst them, as not even to notice the advance of the skirmishers, and if they do remark it, how many of them will be bold enough to put their heads out of cover so as to take aim? It is indeed quite on the cards (and this really happened at Villejouan). that the assailants will get much further forward without firing a shot. This will be their proper course if it can possibly be done, and if they receive instructions to do so before advancing, for the movements of skirmishers once in contact with the enemy can no longer be directed by the higher authorities, all command then devolving upon the company Officers. Skirmishers must be made thoroughly to understand that it is only allowable to run in moments of extreme urgency, as running heats the blood and makes the hand unsteady. I am not making any undue demand upon skirmishers when I require them to move steadily and calmly forward under fire, always of course supposing its effects not to be too deadly. In the combat before Fredericia, on March 8th, 1864, I saw our skirmishers advance across a country heavy from the effects of rain. The enemy's bullets began dropping in amongst them from a great distance. They looked about

them with surprise, formed a good estimate of the range, shook their heads with a merry laugh, and kept on advancing slowly over the difficult ground where to run was out of the question. Whenever practicable, therefore, troops will be prevented from running until they proceed to make their final rush with the bayonet. Whenever the attack is supported by artillery, the infantry should be strictly forbidden to commence firing till within 500 metres of the enemy, lest they should expend their ammunition before getting to close quarters, for it is surprising how quickly men will get rid of their cartridges, and you cannot under any circumstances safely reckon upon providing them with a fresh supply, when attacking across the open, from the time they get within 500 metres of the enemy to the moment of closing with him. All suggestions which have been made with this object must be considered inapplicable to this stage of battle, however practicable at long range, during intervals of inaction or when on the defensive. Thus, during the fight at Villejouan, it was possible to bring up the ammunition wagons, and to complete the men's supply after the village was carried, and while the companies then on the defensive repelled the counter-stroke of the enemy's masses. Thus also at Beaune la Rolande men carried fresh cartridges in their helmets to the defenders. But when a line of skirmishers advancing to attack across an open plain has arrived within 100 or 200 paces of the enemy, and finds itself short of cartridges, no fresh supply can be obtained. No wagons, not even a man carrying a bag of ammunition, can reach the fighters, and should for a wonder fortune favour some brave fellow in doing so, of what use would his 500 rounds be to the company? There would be some two or three rounds a man, and how are they to be distributed? If the skirmishers on reaching their first offensive position observe that some advantage has been gained over the enemy, the proof of which will be partial or complete cessation of fire, they will at once approach the village, whether in one general line, at charging pace for the whole or only for the last part of the way, or by successive rushes of fractions of the line, the firing being taken up by each fraction at the halt, to cover those advancing; all such details will depend upon the amount of persistency with which the defenders keep up their fire, which must, if not completely silenced, at all events be kept down very much for the attack to succeed.

How to Train Officers of the Lower Grades at Field Exercise.

(From the Supplement to the "Militär-Wochenblatt," 1844.)

Sixth Part.

The necessity of giving careful training to our Officers is certainly recognized throughout the Army. Manœuvres, instruction in field duties, the war game, and staff journeys, as well as exercises similar to those just mentioned carried on in various corps, give ample evidence of the zeal and energy with which this necessary work is performed. But all these exercises serve rather to fit Officers for the command of the larger bodies and detachments, and too little is done for the instruction of leaders in the lower ranks. Yet it is upon the latter that devolves the duty of carrying out the orders of their superiors; it is they whose incompetence may cause the best plans to fail owing to want of proper initiative; or, on the other hand, whose able and energetic conduct may lead to victory in spite of want of ability on the part of their chiefs; or again, who by losing their heads at critical moments may produce disaster. At field exercises and autumn manœuvres the part played by these subordinates becomes a subject of criticism, the umpires being indeed specially bound to observe their conduct and to weigh the conse-

quences resulting from it; but the very object of these exercises and their short duration prevent the performances of those Officers from being so judged as to lead them to realize the limits of their power of independent action (limits elastic indeed, but not always to be overstepped with impunity), and to teach them how to act in accordance with true principles. Their conduct on these occasions is briefly praised or sharply blamed, but cannot be criticized in an instructive manner. They are expected to do certain things, but they have no practice in what would prepare them for their duties. Yet, where should this necessary preparation be given if not in the field of exercise? This is not too much to ask, since it is enjoined in our book of regulations, in which there are numberless passages describing situations in which leaders and commanders of all ranks, both commissioned and non-commissioned officers, indeed individual skirmishers, are called upon to act upon their own responsibility.

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If now notwithstanding these unmistakable indications of the Field Exercise Book we do not seem to act up to their spirit on the practice ground, this may be accounted for by the fact that exercises of this nature are never or very rarely called for at inspections, the omission on the part of Inspecting Officers being to a certain extent due to a sense of justice; for many of them say to themselves, "If I expect troops to be tossed about in this way on the practice ground, I must give my subordinates credit for an amount of imagination which does not fall to the share of all, so that very unfair ideas may be formed as to the capacity of men defective in point of imagination, but otherwise capable." This assumption, according to my experience, rests upon false premises, for the omission due to it is not justifiable, because the requirements of the field exercise regulations necessitate, as I have shown, a kind of tactical training calculated to develop initiative in subordinate leaders, to make demands upon their intelligence, and to stimulate their spirit. I hold it then to be the duty of every superior Officer to school the imagination of his subordinates, and that of every Officer to school his own imagination. In this nothing will be required except what is most natural and most desirable for the soldier, namely, that in training the troops under his command he should always imagine himself to be actually engaged in warfare, keeping constantly in view the tasks which he and his men would be required to perform in the field. But in what manner can we give play to and educate the imagination at field exercise? The main point is for the instructor to place three considerations before himself and those under him.

1. Of what larger unit is my force a part, and what position within the same unit does it occupy? What tasks has that unit to perform? What special part has my force to play?

2. Where is the enemy? How does he act at different stages of the manœuvre? What is the effect of his arms upon us, and what of ours upon him?

3. What is the character of the ground upon which we are to manœuvre?

It will not be difficult to communicate information from the points under the first heading briefly and concisely. With regard to the second heading, we shall find it more difficult to represent and to make intelligible the position and movements of the enemy and the effect of his arms, but still we may well succeed in indicating him by means of men, of targets, and of flags; whilst his supposed appearance and disappearance from certain points outside the boundaries of the practice ground may be denoted by setting up marks upon its confines. The effect of the enemy's arms and of your own may also, to a certain extent, be realized by occasionally communicating certain suppositions to Officers whose action will be thereby influenced. The consideration of the nature of the country referred to under the third heading is a

serious matter, seeing that supposititious features of ground are inadmissible and strictly forbidden at field manœuvres. But the *exercise ground* is not the *field* (Terrain) in the military acceptation of the term; at the same time it is not an open, smooth, unplanted piece of ground, as it is too often erroneously considered in contradistinction to the *field of manœuvre*. In the words of the Field Exercise Book, page 163, it should be "a pretty open space upon which troops can freely circulate, and on which all fighting formations can be represented, as they should be practised with a view to different suppositions respecting the enemy and respecting the nature of the ground level, broken or wooded, that is to say, without regard to the character of the practice ground itself."

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A Tactical Example.

(*See* Plate No. I.)

The exercise ground is 1,500 metres (1,640 yards) square. The sides are directed on the four cardinal points. Access to the ground is gained by a broad road leading to the southern side. The brigade is assembled on this road in column of route, the head of which is about 500 metres (546 yards) from the entrance. The Brigadier assembles mounted Officers in a field on one side of the road at the head of regiment B, which is leading. He makes the following communication:—

"I assume that the brigade is followed by a division (*Abtheilung*) of the Divisional artillery (three or four batteries), and then by the other brigade of the Division; the remaining Divisions of the army corps being drawn up in a similar formation 1,200 metres (1,308 yards) to the west. The exercise ground is bounded to the south by a river, only passable by means of a bridge which the road crosses. The black flags mark a low line of heights on the other side of the valley, which rise so much eastwards that the ground about the north-eastern angle of the square is not visible from our present post. The enemy whom our army corps is advancing to attack is reported to be over 3,000 metres (3,279 yards) beyond the river. A squadron of our Divisional cavalry regiment is in advance on each road, whilst the remaining two squadrons have crossed a bridge to the east, so as to cover our right flank. When we advance, regiment B will throw out an advance guard, under cover of which the brigade will form up at the foot of the heights in line of battalion columns; regiment B on the left, regiment A on the right."

The Brigadier now dismisses the mounted Officers, and having allowed them time enough to impart to the troops all necessary information about the situation, gives orders for the advance. He betakes himself to the bridge, where he superintends the passage of the brigade over the river. As soon as Nos. 1 and 2 companies of the leading battalion (the 1st) of the second regiment (A) have crossed over, he orders the call "attention" to be sounded, points to the right with his sword, and gives the following notice:—"A cavalry brigade of the enemy is dashing forward from several points out of a hollow to the east of the black flags and is charging."[1] The aide-de-camp having received his instructions beforehand, makes a similar communication at the same moment to the commander of regiment B, who has already gone to the front. Both regimental commanders repeat the caution, despatching their Adjutants to pass the word to all portions of their command out of hearing. If the troops have been trained in the way supposed, the following measures, or something like them, will be carried out:—The 1st battalion of

[1] Should not the advanced cavalry squadron have detected and reported the presence of this brigade?—Tr.

regiment B, which had been thrown forward as an advance guard, opens out into a line of company columns at deploying intervals, and occupies the line of heights with skirmishers.

The 2nd battalion of the same regiment is drawn up also in line of company columns at deploying intervals in rear of the 1st battalion. The Fusilier Battalion of the same regiment forms double column in rear of the 2nd battalion. No. 1 company of regiment A wheels up by "züge" the eighth or sixteenth of a circle to the right. No. 2 company is still in column of sections; Nos. 3 and 4 are crossing the bridge. As soon as the signal "attention" has been taken in by all, the action goes on pretty much as follows:—The right wing of the extended skirmishers wheels up and opens fire upon the attacking cavalry. All companies of the 1st and 2nd battalions of regiment B whose front is clear deploy with the necessary change of front towards the cavalry, and fire volleys by two or by four ranks. Nos. 1 and 2 companies of regiment A do the same. No. 3 and 4 complete the passage of the river as quickly as possible, and fill up gaps wherever found to join in the firing. The Fusilier Battalion of regiment B, which is in double column, forms square, and also fires on the cavalry if its front is clear. The 2nd battalion of regiment A deploys along the river bank to the right of the bridge, so as to take part in the affair by firing on the enemy's cavalry across the supposed river. The Fusilier Battalion of regiment A is still marching towards the bridge.

The Brigadier has the "halt" and "cease action" (*Stopfen*) sounded, and again assembles the mounted Officers. He will then, should the exercise have taken the turn just represented, give a picture of what Captains might have done on their own responsibility, and will explain the advantages of such a course. Should, however, this have not been rendered necessary there will still doubtless be some particular details of execution deserving of comment. I will assume that they are connected with the occurrences which I am going to notice. The 1st battalion of regiment B, which, by occupying the heights marked by the flags, is to cover the formation of the brigade after the latter has crossed the bridge, has extended one whole company (No. 1), two companies (Nos. 2 and 3) being posted each behind a flank of the skirmishers, and No. 4 being placed on the right rear. The Brigadier asks why this particular disposition has been made. The battalion commander replies that, as when he moved out there was no question of a fight, but only of taking up a position, he did not wish to break up more than one company, and, as for the rest, that his object was to secure his right flank, the outer one. The company in rear of the left flank of the skirmishers (No. 3) has been drawn up in line, that in rear of the right (No. 2) in column. The Brigadier to whose inquiries the Captain of No. 2 alone gives a definite answer, namely, that appreciating the wish of his Commanding Officer to secure his right flank he had desired to contribute to this end by a solid and compact formation, the Brigadier, I say, restricts himself to approval of the manner in which the commander of regiment B had allowed battalion and company commanders to exercise their own discretion as to the distribution and formation of their several commands, even in a situation which did not apparently require any departure from ordinary routine and uniformity. For a constant adhesion to fixed method may, under certain circumstances, produce more disastrous results than the sanction of a departure from uniformity as long as cohesion and control are not thereby endangered, and there is no fear of this when the want of uniformity merely consists in the formation and distribution of companies and battalions within their own field of operation being varied at the discretion of the several commanders to suit the exigencies of each particular situation. In the case before us the strengthening of the right flank was fully justified. Even should infantry be aware that both its

front and flank are covered by detachments of cavalry, it is not thereby released from the duty of being prepared for all emergencies. "All the same," remarks the Brigadier, "as things have turned out it was hardly necessary for the company on the left of the skirmishers to deploy, or for the 2nd battalion of regiment B to form line of company columns, as the latter would soon have had to join the main body of the brigade." The battalion commander takes the liberty of defending the course which he had taken, saying that he thought it his duty to place his battalion in readiness to support the 1st battalion. The Brigadier accepts this explanation, particularly as circumstances had shown caution to be necessary. He then proceeds to remark that he had noticed that, as a rule, too great elevation had been given to the rifles. One Captain, for instance, had gone through the whole scale of his sights from 1,200 metres to 400 and back again. Moreover, no Captain appears to have ceased firing without being ordered to do so. Waste of ammunition must be carefully avoided. A few volleys with the 400-metre sight, fired from all sides on cavalry allowed to approach within that distance, would certainly have sufficed to frighten them away with great loss. The necessity of husbanding the ammunition was all the greater because the enemy's infantry would soon have to be encountered. "The Fusilier Battalion of regiment B got rather out of hand in moving up," adds the Brigadier, with the further remark that it might, when in square, have strengthened the fire from its right face by firing volleys from all four ranks. "Lastly," he says in conclusion, "the Fusilier Battalion of regiment A should have cleared the road, foreseeing as it ought that the General commanding the Division would make no delay in sending forward the batteries."[1] The Brigadier thinks that a repetition of the exercise just performed will be advisable, if only to show that he does not wish to recommend a cut-and-dried system of repulsing cavalry. He defers this repetition, however, to the next day, and confines himself for the remainder of the present one to parade formations, and marching past, to movement in column, and to deployments. The orders given out for the morrow are as follows:—"The brigade will be formed up in the same order of march as to-day, only that regiment A will lead, Fusilier Battalions being at the head of regiments." No instructions are given by the Brigadier as to the order in which the other battalions are to follow. The commander of regiment A places his 2nd battalion, that of regiment B his 1st battalion, in the centre. Next morning the Brigadier supplements his remarks upon the configuration of the ground by stating, "I assume that the poplar in the middle of the north side of the practice ground stands on a slight elevation; with this exception all previous notices about the military situation remain in force." He then dismisses the mounted Officers (see Plate II). On the signal "advance" the operations commence. All Commanding Officers do their best to act upon the Brigadier's remarks of the previous day. This is generally done with so much zeal that misapprehensions soon come to light. For instance, it was hard for some to believe that the Brigadier was in sober earnest when he approved of the conduct of the commander of regiment B in allowing his company and battalion commanders full liberty as to the distribution and formation of the units under their command. The commander of regiment A might, perhaps, think that under the Brigadier's seeming praise their lurked a sneer to which he would take care not to expose his regiment. You may then be pretty sure that he will give his subordinates formal and precise directions, and I assume from previous experience of such cases that he will order the supporting companies of the Fusilier Battalion not to deploy, and the other two battalions to fire volleys from all four ranks.

[1] Should not half a battery at least have followed immediately in rear of the leading battalion of the brigade?—TR.

The commander of regiment B also thinks it necessary to remind his rear battalion that it must take particular care to keep the right side of the road clear. In accordance with these instructions regiment A opens out into order of battle after crossing the bridge, when, whilst the Fusilier Battalion of regiment B is only half over, the Brigadier orders the call "attention" to be sounded, adding to the notice given on the previous day, "a horse battery of the enemy has unlimbered on poplar hill. A shell from it has just fallen in amongst the 2nd battalion of regiment A, another more to the west near the 1st battalion, and a third close to and westward of the bridge." The course of events is now supposed to be as follows:—The 2nd battalion of regiment A, into the midst of which a shell had fallen, and which had already completed its formation in double column, at once opens out by order into line of company columns, No. 10 company of the Fusilier Battalion of regiment A which is facing the same way deploys in the rear of the left of No. 9 company which has extended. No. 11 company comes up in line close behind the right flank of the same skirmishers and fires volleys upon the battery, upon which all the skirmishers also fire. No. 12 company in échelon on the right rear wheels outwards, deploys, and fires volleys on the attacking cavalry with the 400-metre sight. The 1st battalion of regiment A forms square, the right face of which fires volleys from all four ranks. Nos. 9 and 10 companies of regiment B, which have already crossed the bridge, double back by order of the battalion commander to the south bank and deploy to the right of the bridge in line with Nos. 11 and 12 companies, the whole four companies from thence joining their fire on the cavalry to that of the more advanced troops. The 1st battalion of regiment B lies down on the slope of the road embankment, the 2nd battalion of the same regiment forming double column and taking cover behind some farm buildings. Regimental commanders ride to the battalions and companies, making here and there some change in the dispositions. The Brigadier sounds "cease action" and the "Officers' call." He will have good reason to represent the situation of the brigade as critical,[1] and as one which will make great demands upon the wariness, determination, and resolution of Commanding Officers and Captains. He expresses his fear that as things have gone the troops which have crossed the river have got into a position of great difficulty, and in order to make things clear he begins by calling attention to the fact that the enemy's battery, whose first shot only reached the 2nd battalion of regiment A accidentally, could hardly fail to fire subsequently with great effect from its commanding position upon the bridge, which is completely exposed to view, and also on the road, the whole length of which is enfiladed. "Under these circumstances," points out the Brigadier, "the great thing is to disable the battery, with which object in view as powerful a fire as possible should be brought to bear upon it. At from 700 to 800 metres, at which distance from the 1st and 2nd battalions of regiment A the battery had unlimbered, a well-directed mass fire of infantry may well be effective. The fire, however, as actually delivered was neither heavy enough nor properly directed, although very steady volleys were fired from all sides on both cavalry and artillery.

"First of all, I must again touch upon what I consider the first condition of a tactical exercise, the principal object of which is the training of the lower grades of Officers, namely, that whilst the Director of the manœuvres only gives out the supposition on which the operation is to be based, and abstains from giving orders, Commanding Officers must in their turn, when making the dispositions necessary for acting upon the suppositions, take care not to influence in any way their subordinates in the distribution and tactical

[1] Does there appear to be any good reason for the Brigadier getting his brigade into so critical a situation?—Tr.

formation of the units under their command, leaving the responsibility for the same to those upon whom devolves in each particular case the duty of handling the troops in battle. No attention is to be paid to mere want of uniformity in such matters. At the critique which will always follow the tactical exercise, the Director will discuss and determine whether the course adopted in each case was appropriate, whether general unity of action was preserved, whether the supreme direction of the operations was facilitated or impeded, whether subordinate leaders overstepped the proper bounds of their authority, and last, not least, whether they failed to exercise a proper initiative within these limits. The commander of regiment A erred all the more grievously by his interference that it contributed to prevent the requisite development of fire. The chance shell which, according to my assumption, fell in amongst the 2nd battalion when still in close formation would, had the battalion already opened out into line of company columns, have probably expended itself in one of the intervals, and would at any rate have had a less disturbing effect had it struck a single company instead of the united battalion. The formation in company column which was afterwards deemed advisable would in actual warfare even more than in the case before us have distracted the attention of the battalion and company commanders from the necessity of immediate deployment to open fire, which might have been directed by two companies on the battery, and by the other two on the cavalry. All the battalion commander had to do was to give the following cautions: 'Nos. 5 and 6 against the cavalry; Nos. 7 and 8 against the artillery.' It would then have been the duty of the Captains on the right to make the necessary change of front, then to form line two or four deep, according to the space available, and to fire volleys either from two or four ranks, naming the range, whilst the Captains on the left extended their men as skirmishers, judging their distance from the battery, in doing which on service they would be aided by observing the effect of the volleys which the companies of the Fusilier Battalion would presumably have already fired. At peace practice they would either have heard the word of command given for the volleys, or they would have to find out at what the range had been estimated, afterwards forming their own opinion on the subject. The Captain of No. 10 company supporting the left wing of the line of skirmishers should not have contented himself with merely deploying, which he wisely ordered upon finding himself in the line of fire, but should have led his company up to the skirmishing line at the double and have taken part in the fire on the battery, an example which should have been followed by No. 11 company. That No. 12 should at once change front towards the cavalry was a necessary consequence of the situation, and an evident result of its position in échelon on the right. The men would have got into action more quickly if the Captain had combined the wheel, the deployment, and the making ready to fire by giving the words 'Right wheel,' 'Deploy and load,' 'Halt,' all together, in keeping with para. 43 of the Field Exercise Book.[1] If, however, he could not feel sure that orders thus given would be carried out calmly and with regularity he did well in delaying the commencement of his fire rather than make the men unsteady. But if companies are trained in accordance with the para. just quoted, and if battalions are trained in accordance with the concluding sections of para. 112, no doubt of this kind need be entertained.[2] The 1st battalion of regiment A, which was at the time in double column, and which the shell fire did not prevent from maintaining this formation, got into square, its right face open-

[1] Para. 43 contains "general remarks" concluding the chapter upon company drill, whilst para. 112 concludes in the same manner the chapter upon the battalion.—TR.

[2] "General observations" concluding the chapter on the brigade.—TR.

ing fire from all four ranks. This was all done steadily and properly, which I accept as a proof that the above-quoted paras. are attended to in that battalion. A still greater development of fire would, however, have been obtained if the Commanding Officer had made the two companies of the right wing deploy to right and left. There would have been room for this, as the battalion would not have been masked by Nos. 9 and 10 companies of the Fusilier Battalion of regiment B, which, as, we know, although they had completed the passage of the river, had returned to the south bank at the double. This retrograde movement took place by order of the battalion commander, who evidently wished to keep his battalion in hand at this critical moment, and who afterwards deployed it at the double on the right bank in a very orderly manner, afterwards opening fire on the cavalry. I think it, however, worth considering whether the rapid movement to the rear of those two companies, which might have come into line in less time by moving to the front and with no more exposure to loss than fell to the lot of regiment B, whether, I say, this movement might not have exercised a bad and demoralizing effect had the enemy's shells really been falling all over the place. Besides which, the movement was in this case the most unsuitable which could be made, because, as already stated, the bridge and the road leading to it would most certainly have been the principal marks aimed at by the enemy's guns, the distance of these objects from him being of course well known to the battery commander from the map in his possession. The battalion commander might well have left the Captains of Nos. 9 and 10 free to judge for themselves. The deployment of the whole battalion on the south bank, moreover, took so much time that the good steady volleys of the companies would hardly have been fired soon enough to prevent the success of the enemy's attack if this had not been already repulsed by the troops on the other side of the river.

"That the 1st battalion regiment B which lay down on the slope of the embankment would not have found cover there from the enemy's fire, is evident from what has before been stated; it had better have formed up close behind the Fusilier Battalion, or just to its right; in the former case, the four ranks closed well up to the front, in the latter case, the two ranks of the battalions standing side by side would have presented that formation of minimum depth recommended in para. 137, page 191, of the Field Exercise Book.[1] Moreover the battalion thus posted would have been ready to open fire at once in case of need."

"One last remark," says the Brigadier, turning to the Captain of No. 9 company regiment A, which had been extended, "your company is the only one which I did not hear fire any volleys. What orders did you give upon this point?" The Captain admits that the leader of the skirmishing "zug" had forestalled him by giving the word "three rounds at 800 metres," which order was immediately conformed to by the other two "zug" leaders. He, the Captain, was all the more unwilling to interfere in the matter, believing the subalterns to have judged the distance correctly, because he thought it a good thing to combine the advantage of a better aim, resulting from independent firing, restricted as to amount with that of mass firing by volleys at word of command which would follow. The Brigadier neither blames the rapid exercise of initiative on the part of the "zug" leader, nor the views of the Captain, but thinks the following criticism justifiable. "The company was about in the centre of the practice ground, which is 1,500 metres square the battery supposed to be on the poplar hill is thus about 700 metres from

[1] Half a company would be about equivalent to the number of men whose fire would be available from one of the flank faces of a battalion square formed from double column in the German fashion.—TR.

the company; if the Captain and his subalterns had completely realized the assumed situation, they would have said to themselves that the first shots to be fired should be less for the purpose of hitting the battery which had suddenly appeared, than for finding out how far it was off. The first fire should therefore have been directed by the Captain in person, and for the same reason volleys should have been fired." And now a question to the Commander of the Fusilier Battalion of regiment A. "Why did you allow the whole of No. 9 to extend? The battalion was intended to cover the deployment of the brigade, but the enemy was still 3,000 metres distant with cavalry in front. Surely then it would have been sufficient to post the company in close order, or to place its three 'züge' at intervals under the brow of the hill, with a picket and patrols along the crest. I purposely left this point uncertain yesterday when discussing the proceedings of regiment B, expecting that the commander of regiment A would correct the error, if the commander of his Fusilier Battalion did nöt make the necessary amendment. Let us now compare the number of companies which actually came into action with that of the companies which might have done so, in order that we may judge of the result.

"*Against the Artillery* we have first—
No. 9 company of regiment A, and immediately after,
No. 11 company of the same regiment, both of which were brought up in quite a regular manner, but did not hit off the range.

"We might have had in addition—
No. 10,
No. 7,
No. 8, in short, five instead of two companies.

"*Against the Cavalry* we have at once—
No. 12 company of regiment A, and the right face of the square formed by the 1st battalion of A regiment; later on—
Nos. 9 and 10 companies, B regiment, the men of which would certainly have been much excited, had the occasion been one of actual warfare; and would, moreover, have been exposed to a heavy fire in re-crossing the bridge after them.
Nos. 11 and 12 companies, regiment B.

"On the other hand we might have had at once in action –
Nos. 12, 5, and 6 companies, regiment A.

"The right face of the square of 1st battalion regiment A; *i.e.*—
Nos. 1 and 2 companies deployed to the right, also
Nos. 9 and 10 companies of B regiment, and a little later on—
Nos. 11 and 12 companies of B regiment, all without undue hurry;

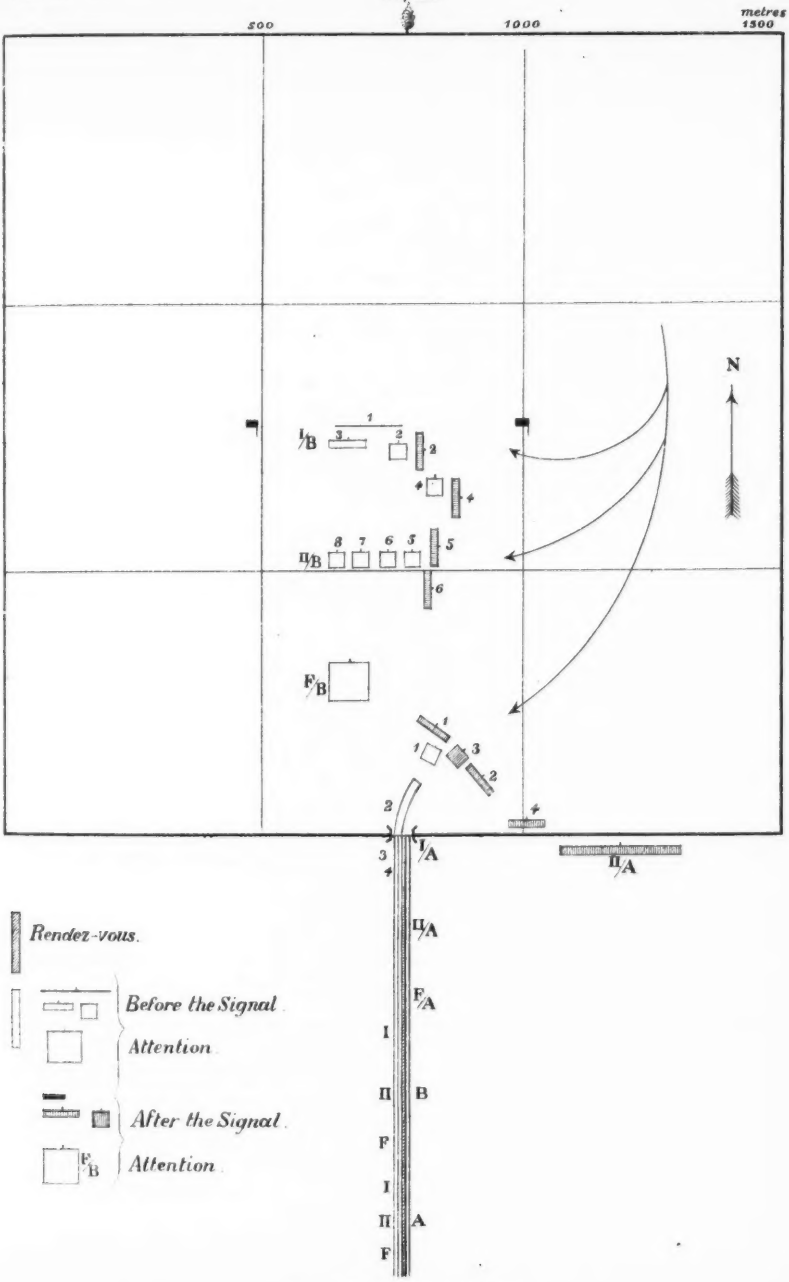
"*Finally also*—
1st battalion of B regiment, making a total of seven companies to commence with, ending with thirteen, instead of one and a half to commence with, ending with five and a half.[1]

"Another observation," adds the Brigadier, "will not be superfluous. I have nowhere spoken of general principles for which infallibility is claimed, and to which exceptions are not admitted. I have only reasoned upon individual occurrences, with the intention of promoting reflection upon them. When the critic bases his observations upon fixed rules, he only, in my opinion, creates confusion, the consequence of which will be that subordinates will try

[1] Half a company would be about equivalent to the number of men whose fire would be available from the flank faces of a battalion square formed from double columns in the German fashion.—Tr.

FIGURE I.

Poplar

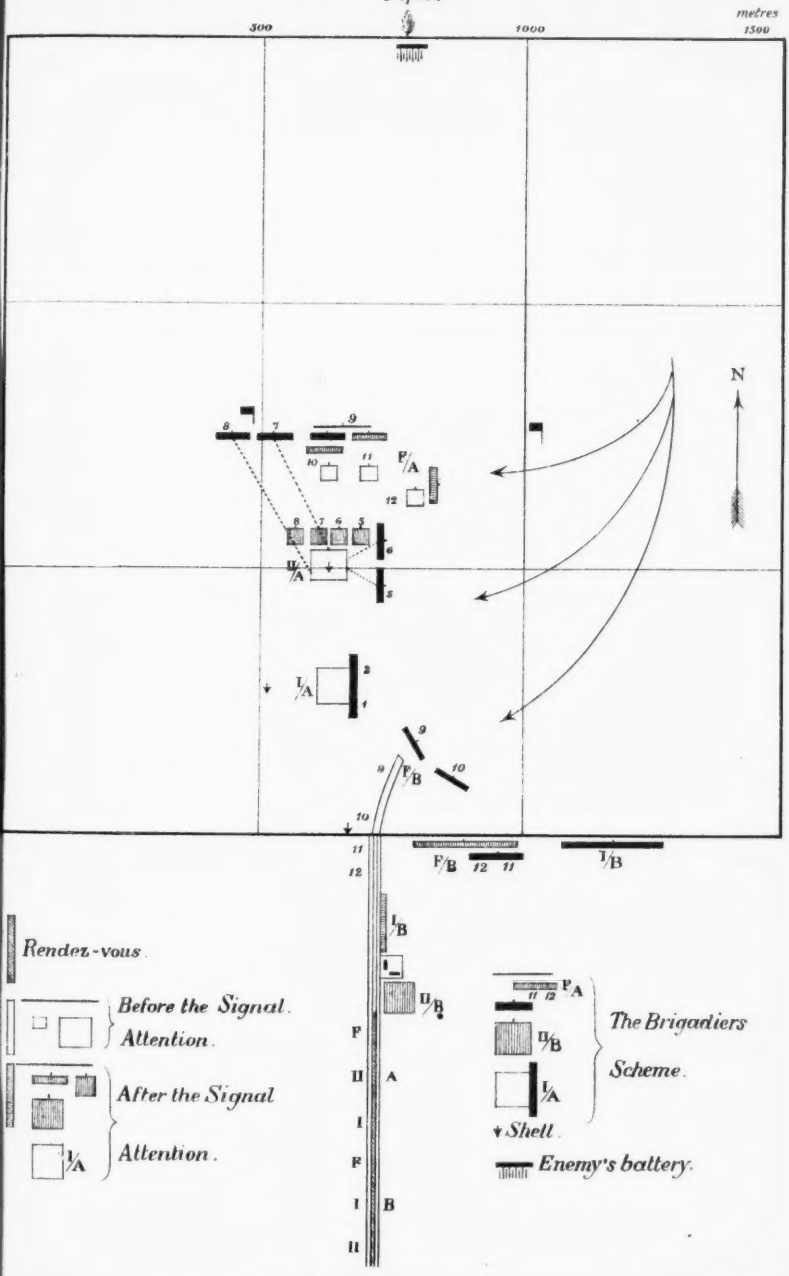


Harrison & Sons, Lith. 59 Martins Lane W.C.



FIGURE II.

Poplar



to discover the views, the wishes, and will of their superiors, and will not learn to act according to the circumstances of the moment, to use their own intelligence, to recognize and appreciate their own responsibility."

With these words the Brigadier dismisses the Officers, and on this, the second day of exercise, will still find time enough to comply with the requirements of the second part of Section 3, treating of the "general principles" to be kept in view at field exercise, as detailed in the Regulations of June 17th, 1870. "Field exercise," we there read, "not only serves to prepare the individual soldier and leaders of troops for warlike operations, but also to strengthen discipline by a fixed adherence to recognized forms." The Brigadier will thus again practise parade movements, marching past, and formations in column, the last of which are peculiarly adapted to give troops which are brigaded together the idea of interdependence, and also to impress upon them the necessity of working together for a purpose common to all. Hence these evolutions in close order should not be, as they are too frequently, a mere succession of marches to front, to flank, and in oblique directions, combined with changes of front without any apparent motive; but they should be executed with the distinct purpose of changing position from one point to another, chosen beforehand at no great distance by the shortest possible route, with varied formations and the necessary changes of direction. Whenever a Brigadier sets himself a task of this nature, he finds out that, simple though it may appear, it is for that reason by no means easy of execution, and that it makes considerable demands upon the imagination. As on account of changes of front and of formation, the shortest way from point to point is by no means the most direct, the director of the manœuvre will have to exercise his imagination and come to a rapid conclusion, so as to go as little out of his way as possible, and at the same time to select the most convenient intermediate point for suitable changes of formation and of direction. By having a distinct object in view, which object need not be pointed out, because it will be instinctively recognized by the troops, the weariness resulting from aimless drill will be dispelled. Variations of pace will be at the same time practised, the troops marching sometimes at attention, sometimes at ease, now and then at the double, a variety which gives animation to the work conducive to discipline, which is, on the contrary, impaired by a sleepy way of doing things.

L. G.



DRILL OR EDUCATION?[1]

(A Lecture delivered at the Military Scientific Society of Vienna on the 3rd November, 1883, by Lieutenant Field-Marshal the ARCHDUKE JOHN, Commanding the 25th Infantry Division.)

Translated, by permission, from the German by Captain W. A. H. HARE, R.E., D.A.Q.M.G.

MOTTO: *Rauheit hat mich oft gereut; Milde niemals; ein gutes Wort ein freundlicher Blick erzwingt Gehorsam und Liebe.*—RUDOLF VON HAPSBURG.

Drill as a Talisman.

SUCCESS in war is no game of hazard, but the inevitable triumph of the strong over the weak. Such strength — putting aside religious and political grounds—is the result of better army organization, better armament, better generalship, and, finally, better fighting qualities. The first three of these factors are matters which concern the War Department of the State concerned, and mainly depend on questions of finance and the extent to which military service can be exacted from its citizens. Generalship, that is to say, the higher military commands, is left to a few individuals. But the fighting qualities of the private soldier, or, in other words, his military value, is a matter which concerns us most, for it is, to a great extent, the result produced by our care and labour, and the object of our work.

The terrible character of modern warfare, with its shattering effects on the soldier's *morale*, its frightful carnage of human life in such restricted spaces of time and place, and the increased difficulties in the way of personal influence of Officer over man, makes the struggle between the natural instinct of self-preservation and the feeling of duty go harder than ever against the latter. But it is exactly in this triumph over the natural instinct of self-preservation that the fighting value of the soldier lies, or, in other words, his use as an instrument in the hand of a higher directing mind.

It is impossible while looking at this question not to call to mind Frederick the Great at the battle of Kolin, who, when irritated at his wavering Grenadiers, led them on with the words, "Rackers! Wollt Ihr denn ewig leben?" (Rascals! do ye wish then to live for ever?).

With the slaughter of St. Privat and Plevna fresh in our memory, there has been an effort in nearly every army to find some means of checking the evil results of such carnage on the soldier's mind, or, in other words, counteracting the instincts which are so naturally brought into play in the human mind by the character of modern fighting. And in this respect it is certainly to be regretted that this has not been made the subject of so much attention as should have been the case, and that the man himself has not been con-

[1] "Drill oder Erziehung?" Vortrag gehalten im Militär-Wissenschaftlichen Vereine zu Wien am 3. November 1883, von F.M. L. Erzherzog Johann. Wien. 1883. Verlag des Militär-Wissenschaftlichen Vereines.

sidered as a factor of success in war to the same extent, at any rate, as technical improvements in arms, the minor details of drill, and such-like matters of investigation. Had it been so, indeed, our opinions would have been a deal clearer on the subject.

Now, opinions on the way in which *the man is to be fashioned into a soldier* are naturally just about as different as inclinations, tastes, thoughts, and individualities.

Where the training of the soldier, just as the carrying on of a war, finds a firm and healthy support on some great feeling inspiring the masses of the nation, on subjects of great national interests affecting all, on the enthusiasm inspired by some great man, on the as yet unimpaired power of religion, or on the passions, be they noble or ignoble, of a people, the task of forming soldiers is an easy one, for it becomes then merely a question of giving effect to such impulses. But it is a very different thing when the training of the soldier can only look for support to a very slight extent on a feeling generally pervading the nation, and when, in other words, some great *general* motive power, such as a *universally* popular war with the people, is out of the question.

It is maintained by some that *discipline alone can make troops reliable in war, and that discipline can only be arrived at by strict drill.* This means to say that the systematic fashioning of the individual man, entirely destroying all initiative of his own, can be carried to such an extent that the very thought of indiscipline is impossible in his mind, and troops can consequently be relied on to carry through what is tactically required of them, without any regard to personal danger. In other words, instead then of the moral motive power which, resting on the honourable traditions of the Imperial Army, the Archduke Charles embodied in his high-minded soldier's watchword in the three words, "motive, thought, and mind," and which were embodied to such perfection in Marshal Radetzky's army, we are to have stiffness, formality, the parade step, and Prussian drill!

This is not my opinion.

But first of all, to remove any false impression that may be made by my allusion to Prussian "drill," let me say that I do not in any way mean by this, Prussian "training." In Prussia soldiers are drilled *and* educated; Scharnhorst said that a strong and natural thinking power was one of the first qualities of the soldier. What I mean by "drill" is—as carried on in Prussia, *hand-in-hand* with training for war—a series of formalities which, thanks to the intelligence and previous education of the Prussian recruit, is attended by no serious results to his real military training. But the same could only be arrived at by us by sacrificing the real training of the soldier for war, as with the inferiority of our raw material, and the consequent enormous difficulties in our way of forming the soldier at all, training for war demands all our time and care, and would suffer if these were devoted to any other purpose.

In Prussia parade drill may be looked upon as *a luxury*—a luxury which may be tolerated, though not, perhaps, with impunity—but with us it is nothing more nor less than *a sin.* The rich can afford to pay for unnecessary luxuries without perhaps feeling the cost, though they would be richer if they avoided such extravagance. The needy must confine their expenditure to what is strictly necessary, and they only injure themselves by aping the manners of the rich. An educated person can in time master two languages but with no foundation to build on, he must be content with one. Now, if the choice lies, so to speak, between the two languages to be acquired by the soldier, that is to say, training for war and training for the parade, we must decide at once for the former.

By this we only mean to protest against the way in which drill is overdone

and carried to an absurdity, and precision imparted to matters where it is quite out of place, with the view of training soldiers for war; in fact, we protest against the unreasonable inclination to imitate, solely and alone, the German Army—admired and respected as it is by all of us—in certain unmeaning outward details which must surely cause our friends the Germans a certain amount of amusement if not pity; and not without reason. *Qua nocitura tenes, quamvis sint cara, relinque.*

Let us not forget that our great country, peopled as it is with so many different races, is not only from a geographical, but from a social point of view, really in a state, we may say, half-way between the West and the East. *Our* raw material in men, taking it in all, whatever good fighting qualities it may have, does not permit us to play with that dangerous game, parade precision, that is to say, *it cannot stand it, it loses efficiency by it.*

The same rule cannot apply to all; "reason would become nonsense and virtue a vice." But it is one of the hardest tasks that fall to the lot of statesmen and soldiers in high responsible positions, to correctly understand the nature of the human element confided to their care and turn it to the best account. On this nature must depend the system of training and fashioning the soldier, and the character of the means adopted for getting the best value out of his fighting capacity.

In things that we put the highest value on, we do not as a rule imitate the customs of our neighbours; we should be as we appear, and, what is more, present ourselves as such. Nothing is done by borrowing and aping the manners and customs of others; it merely goes to show that we have little faith in ourselves.

We Austrians have a natural tendency—and it is an inherited weakness in our character—to admire everything that is foreign, especially if it be successful, no matter on what grounds. Who can forget when, after the campaign of 1859, the order of the day was to *imitate the French*, which we did, even to the fashion and cut of our uniforms and such-like minor details. The misinterpreted imitation of our conquerors, with their *élan* and their offensive tactics, brought about the fatal *shock tactics* which cost us so much blood in 1866, and did more than all our strategical blunders to bring about the disastrous results of that campaign. *And now we are copying our Prussian masters, being influenced solely by the results they have achieved, and fancy we see the talisman of success in a caricature of their stiff drill. Would it not be well to see whether the new system, if overdone and trusted to implicitly without any regard to other factors in the case, might not lead us into the same paths of error as did our old shock tactics, copied from the French?*

German Successes.

But Prussia, with her military system, was victorious in the campaign of 1870–71—the most important of the present century—and the French Army, which was undrilled and slack, was beaten. This is a fact, say the admirers of drill, and admits of no further argument.

Stiff drill, tolerated in Prussia without evil results, is in accordance with the traditions of the Prussian Army of last century, and is felt to be all the less irksome, as the first soldier in the country clings to it with a justifiable kind of religious feeling.

There are, besides, many things to be seen in Prussia which the credulous might easily take for signs of military strength.

But it should not be ignored that in all their training schools and in the education of the soldier, the Prussians work on the man's power of thought and power of resolve; that during the sixty years in which the Prussian

Army was trained for its final triumphs, the Waldensee theory was in force, and the tendency of this is to quicken the soldier's judgment and train him in field duties; that this practical system still gives unmistakable signs of being the right one to-day; and that field firing, with its tactical application, and field training in the autumn and winter, are practised with the same amount of intelligence and success as ever. Military opinions in Prussia openly declare that excessive drill and the worship of forms must sooner or later disappear.

It was not drill or exterior forms that led the Germans from one victory to another; it was the national spirit with which the war was undertaken and carried out; the excellent military law which had become a second nature to the Germans; the iron determination which pervaded every branch of the service; the desire to press forward shown by their marching and fighting exploits; the power of attraction the sound of the cannon had on all Generals, high or low, making them set their columns in motion for the scene of strife, with or without orders, and without shunning responsibility. The French soldier did his duty. The graves of the slaughtered Germans are silent but grim proofs of the bravery and devotion of their opponents. The French could not attribute their failures to their soldiers not having mastered the art of marching past with a prancing step or mounting guard with Prussian rigidity and stiffness; it was their bad organization; their neglect to turn the strength of the nation to proper account; the mobilization on the frontier; the want of system in their leading; and the carrying on the war after the fall of the Empire by amateurs and *dilettanti*. These were the causes of failure.

Obedience of intellect and strength of mind are, of course, indispensable factors, but these are far more necessary with the *higher* ranks than with the rank and file; it may be said that the necessity for reliable discipline increases as the square of the importance of the command, of the degree of responsibility, and of the danger of disobedience.

When the arrival of a column has been arranged to take place at a certain time and place, but the Officer in command has other ideas on the subject, or does not comply with his orders, or finds that the marching powers of the troops in his command have been over-estimated, or fancies that the probable action of the enemy will prevent his carrying out his instructions; or, when personal ambition is carried so far as to subordinate the welfare of the whole to that of the individual, and gives rise to reckless enterprise—then calculation is out of the question, and failure more than probable. *This* kind of discipline may, to a certain extent, have been faulty on the French side. *And with us it is insufficiently fostered, too little practised, and breaches of it are not always severely enough dealt with.* Discipline of this kind is, however, not to be confounded with the strict drilling of the rank and file, and is certainly not to be acquired by it.

A straight-jacket never cured a madman yet; the mind cannot be disciplined through the body. The effect cannot be produced by working inwardly from the exterior, but just the other way, we must work outwardly from the interior. The exterior of the trunk of a tree may be perfect and sound, but in spite of this deceptive covering, the interior may rot away and die, and the first storm may blow the tree down if the interior is unsound. It is inwardly that we want the soldier beautiful; it is inwardly that we must make him smart and soldierlike. It is the true beat of a stout *heart* in a manly breast that we must look for, and not the mechanical beat of the drilled footstep on the parade-ground.

How little strict drill really means discipline may be inferred from the fact that many of our regiments that excel on parade in drill and appearance are by no means the most highly disciplined; whereas other regiments, the names

of which have been associated for years with the glory and honour of the past —regiments which from time immemorial have enjoyed all those glorious military traditions that make the heart of the soldier and patriot beat high—have presented anything but a smart appearance on parade. With the Turks, who are the next thing to a mob on parade, who move any way without any kind of time or step, with no words of command, and with an absolute contempt for dressing and appearances, there is, as a matter of course, the most complete military subordination to the superior. The Prussian drill which was in existence in Napoleon's time no more enabled the French to fight as they did under the leadership of the great Corsican, than it did some sixty-four years later on.

The real causes of the German successes in 1870 and 1871 we must look for not in Prussian drill, but in *Prussian sense of duty, Prussian determination, and Prussian power of endurance;* these are what we must try and copy.

Form and Spirit.

The long-standing difference of opinion on the relative importance of form or spirit will always exist as long as there are men; but to those who recognize *both* as necessary, this difference of opinion has no meaning.

The perfect man is he in whom the unity of body and soul, or in other words, form and spirit, is typified. The body without the soul, that is, the form alone, is an inanimate object; the soul without the body is an object of faith, but not one that can be demonstrated by science. Just as great as is the support of a healthy body to the soul, and just as useful as may be the *right* form to the spirit, so inversely can the *wrong* form be injurious when it does not express the spirit, but rather forces itself on the latter to the prejudice of its proper functions. The form may be compared to the coat which gives a certain finished appearance to the man without interfering with the action of his limbs. But if the coat is without cut or fit, it impedes the man, cramps him, or interferes with his freedom of limb. In a word, form and spirit are both important, but the former must be subordinate to the latter; form *without* spirit or *contrary* to spirit is not only useless, it is positively injurious. And yet notwithstanding this does not the "one" "two" of the drill sergeant mean the drilling of *form—form without a purpose?*

The members of a certain party may sneer if they like at us Utopian dreamers, and persuade themselves that strict discipline brought about by strict drill is the only means of training soldiers, quite regardless of all other factors which affect human nature and inspire a sense of duty. But it is only false pride after all that makes them say, "What! enthusiasm, patriotism, devotion? Rubbish! what we want is implicit obedience, and this we get by strict drill."

But there is a *two-fold error* in this theory, for in the first place obedience is not everything, and secondly, it cannot be arrived at by physical drill alone.

When the forced march, the bivouac without rest, and the difficult forest and mountain path has knocked all the parade smartness out of the heavily-weighted and exhausted soldier; when the whistling bullets are flying thick; when there is no cover from the enemy's fire, or when a death-dealing line has to be stormed; then discipline alone is not enough, the authority of the Officer loses its power, for the fear of the enemy's bullets inspires a far greater dread than all his threats. Many an Officer who fancied he had got his men entirely in hand by strict drill alone, would certainly find out his mistake under such circumstances, and then see the utter collapse of a system which he had implicitly believed was infallible.

The courage of self-sacrifice, be it inactive or passive, can only be the result of the higher or nobler motives that govern us. "It is no normal condition of our existence," writes a Prussian author. "It is one that can be arrived at either by a fanatical or an ethical spirit, but the former is inhuman, whereas the latter is elevating in character. The former we cannot arouse in a civilized army; it would be the source of endless danger to military discipline; the latter is the end and object of all military systems and tactics." The same author complains "that the soldier is looked upon as part of a machine that works perfectly as a whole, but that unfortunately in this no account is taken of the uncertainties of human nature."

It is of course unaccountable that the Officer and instructor should, of *his own free will*, neglect all recourse to the more powerful moral incentives of the man, and trust solely to mechanical obedience induced by the crushing out of all individuality—means which, under certain conditions, are perfectly inadequate to the end. We might just as well, instead of using language to express our thoughts and ideas, use nods and signs; it would indeed be just as reasonable. Even the dumb animal is far more easily governed in many ways by the voice than the rein or whip, and we may see this used every day by the ploughman with advantage with either horse or ox. But man, "God's own image," cannot be managed by means that appeal to the senses, such as these! No appeal can be made to his *thinking mind* or *feeling heart!* Such theories are simply rubbish.

The discipline that is carried to such an extent as to crush out individuality is no discipline at all, for discipline is the feeling of the subordination of one's own will. *But the will must be there.* In fact, our regulations for the training of the young soldier make a point of furthering the power of will. Not a machine with no will of its own, which remains motionless unless the motive power in the shape of the Commanding Officer sets it going—a mere disciplined apparatus which fails when it is a question of spontaneous self-sacrifice or devotion. No! the soldier must be a *human being* and *a man* of strong determination, and rendered thoroughly reliable and self-sacrificing by working on his spirit and feeling.

We know how often and often the well-known case of the company of Prussian Guards at the battle of Rudersdorf is brought forward as an example, we mean the case of the company which, when it got out of order in action, was carefully dressed as if on parade by the Officer in command. But how many hundreds or thousands of cases could be brought forward of troops in critical moments having been encouraged to acts of the greatest devotion by a few properly-inspired words of their leader, accompanied with his own example.

The races that people our Empire, full of high feeling and susceptibility, tractable but proud, and manly but excitable, produce brave and excellent soldiers *if their good qualities are thoroughly turned to account.*

At the time when stiff formality collapsed so completely at Jena, Austria would never have survived an Aspern nor have offered the conqueror the desperate resistance she did, had not a great man instilled *spirit* and *feeling* into her army, and had not an appeal been made to the *high qualities* of the Austrian people. Nor would the appeals of Maria Theresa, in times of dire distress, have been answered with the cry of "*Moriamur pro rege nostro*" from a people whose will had been entirely crushed out; not a soul would have answered by word or deed had anybody dared to raise the cry.

Over-drilling and its Dangers.

As the desire of our supreme military chief, and consequently our highest authority, is that "at all trainings and exercises, the practical object in war

must alone be considered, and must never be lost sight of by the instructor," all drill having for its object precision and stiffness alone, is in direct contradiction to the Regulations, and represents exercises which not only have no object in real war, but are even detrimental to effective training for the same.

The Regulations also say, "the position of the soldier should be easy and *unrestrained*," but the advocates of excessive drill get him into an unnatural and almost ridiculous attitude, cramping and straining his body from the crown of his head to the soles of his feet. The word of command "stand at ease," by which, we take it, the soldier is supposed to get into a *more comfortable position*, the same advocates turn into a strict motion of drill made with a telling slap, and instead of being a position of ease it is merely a strict position of drill. The Regulations also require that "all movements of the soldier must be made with free and unrestrained efforts of the body," and that particular attention should be paid to a "*free and elastic step*," but in spite of this the drill advocates insist upon an artificial step of throwing out the feet and bringing them sharply to the ground, as tiring as it is useless, and quite impossible on anything but an even parade-ground. "The rifle is to be *carefully* handled; sharp raps on it purposely given to make the motions 'tell' are to be avoided." So say the Regulations, but we find instead sharp and quick motions required by smart drill masters, regardless of injury to the rifle, just as if the care of the latter were quite a secondary consideration. It is not to be wondered then that the zeal of these enthusiasts goes so far as beating time with the hand on the pouch to mark the pace, and loosening the bands and screws of the rifle to make the motions of the manual "tell," and other similar absurdities.

The wheelings with faultlessly-dressed ranks, the stepping-short with the crawling motion of the feet, the advance in line of several battalions to practise the feel and touch of large bodies, the slow extension of lines of skirmishers advancing and retiring in dressed lines totally regardless of the nature of the ground, the pernicious practice of extending and closing the lines of skirmishers themselves, the cut-and-dried formal formation for attack—which is just what the attempt to carry out elaborate and rigid exercises with lines of skirmishers comes to and nothing more—and such-like performances, are one and all errors leading to the conversion of the soldier sooner or later into a *machine*.

But is overdone drill and smartness carried to an excess over and beyond what is necessary merely a useless, a harmless playing at soldiers? No, it is worse than this, it has *dangerous results*.

That excessive drill destroys the will, and consequently crushes the man morally, is not the worst part of it. Far more serious is the stupidity arising from the intellect and thinking power being systematically ignored, and the man consequently never called upon to think. We should appreciate, value, and turn to account the natural intelligence, sharpness, and powers of observation—if we like, the Indian talents—of the many races that constitute our Empire. To allow these to get rusty—and everything rusts when not in use—seems to me to be most unwarrantable.

But the very worst evil that arises from the system is when the man has too strong an understanding to lose his individuality, for he then *shams obedience*, that is to say, he is trained *to deceive*. Nothing favours this sort of thing more than unreasonable demands which are impossible to comply with. As soon as the ground becomes difficult and the men are tired a natural reaction sets in, the change from the strictest order into disorder is then all the more striking in proportion to the degree in which the former has been enforced, and the authority of the Officers is then either unheeded or else these are deceived. Our Regulations take a perfectly correct view of

this psychological effort, and say that no more should be required "than the nature of the ground *permits*, or than would be possible under the circumstances of real war;" and in the Prussian Regulations we find a strict line drawn between what is required for parade purposes and what is required in the field.

But this is not all. The curse of evil is that it must *continually* beget evil.

By crushing out individuality and using a purely mechanical system of drill —putting aside the cruel strain it puts the soldier to, and the immense trouble it gives subordinate instructors—a Commanding Officer can, *with the least trouble and inconvenience to himself*, attain what appear to be the most astonishing results, and by the apparent machine-like precision with which his men are drilled, gives the impression, or rather he fancies that he gives the impression, that his men are perfectly trained. But this requires no power of thought, no military knowledge, no gift of instructing, no appeal to the mind, no personal moral efficiency—in fact, no understanding or personal characteristics. The most incapable man can train troops in this way. But if this strictness acquired by drill be taken as the exclusive test for the efficiency of a regiment, and consequently for that of its Commanding Officer, then it amounts to a positive danger both for the Army and the country.

I have asked myself involuntarily the question: What on earth is it that leads men into such paths of error, and men of sufficient experience to know perfectly well that success in war must depend very much more on other factors? Is it conviction or is it convenience, or is it, in fact, the natural outcome of that desire for power which is more or less active in the breast of man, and which delights in subjecting the will of others—no matter how—to his own? But to try and satisfy our desires, even in this respect, by means of a purely mechanical nature, would lead us almost to suppose that it were impossible to arrive at the same results by means of an intellectual and moral nature. I myself think that not *one alone*, but that a considerable portion of *all* the above causes have something to say in it. For the belief of the men we allude to cannot possibly be so blind as to fancy they see the promising words, "*in hoc signo vinces*," written over their imaginary perfect human automatons.

But the most remarkable irony of facts in the whole case is, that whereas all this strict drill, arrived at with so much trouble and expense, has for its end and object *the complete disciplining* of the man and *his implicit obedience*, those that employ the means referred to are themselves guilty in doing so of the most *flagrant act of disobedience* of the highest military authority. Turn, for example, to page 9 of the Introductory Part, where it says that strict discipline "*is best enforced by the example of implicit obedience on the part of the superiors.*"

Mechanical drill has, however, found its re-echo in *military literature*, and this way of propagating the poison is an *especially dangerous one*, as under the cloak of science, and as a handy kind of sophistry for the ignorant and lazy, it finds many believers, and perverts, or at any rate confuses, them. Such authors literally worship the golden calf of strict drill, with a supreme contempt of all appeal to spirit and feeling, amounting to fanaticism.

"Fighting efficiency," says one of these writers, "will be found among those excellent qualities which troops arrive at by the process of smart and strict drill, that is to say, by *drilling in close formation on the parade-ground.* . . . This is the secret of concentrated and reliable order and strength which troops *can* and *must*, above all things, arrive at and possess for the day of battle and the hour of danger, and *nothing else will do in its place.*" A lecture which has been published, says: "Strict drill in close formation and the

manual exercises are training necessities without which modern armies could not exist. . . . All these considerations point to the necessity for *adding fresh power to formal drill.* . . ." Another, and in other respects excellent publication, alludes to the drill-ground in the following strain :—"Troops must be well, often, and unceasingly drilled in peace time. *The parade-ground, that excellent training school of implicit obedience, that gymnasium of bodily and mental discipline, cannot be used too much.*"

But what are we to expect if young Officers are taught doctrines such as these as a preparation for the next campaign, and if they are told at the same time that it is better to pass the winter time with drills of this kind instead of *schools* for the men? Those who hold the parade-ground alone in such high esteem, have certainly but a poor opinion of schooling. If contemplations such as these were to get a hold on the Army, we might certainly say "We had neither learnt nor forgotten anything."

The theory of strict drill goes, however, beyond this; it lays down the *normal formation for attack* for even large bodies of infantry, the misleading form or pattern—the refuge of the incapable—and pretends to be able to drill brigades and divisions just as the drill corporal does a squad.

Theories such as these must have a positively sickening effect on the sensible Officer and thoughtful patriot, in view of the consternation that would arise in critical times; he might well indeed think that *peace had lasted a little too long.*

Requirements based on Common Sense.

It is, however, a pleasant thing to think that we can rest assured that the drill system, with its bad effects, cannot really get a firm foothold in our Army, as common sense and discernment have really shown themselves averse to it. With the exception of some minor details—and let us hope that we shall soon see these vanish too—our training may be said to be generally based on what is really required for war.

As a matter of fact it would never occur to any reasonable man to underrate the value of the strictest performance of all minor details, accompanied as it must be with a certain *necessary* formality. Nobody, for instance, would ignore the value to be attached, from a disciplinary point of view, to the correct giving and returning of military salutes; but we must not think that this is done to make the soldier "see," but rather to instil him with respect for his superiors, and feel a certain amount of personal pride in having his salute correctly returned. The most determined opponents of drill will certainly admit that the strict closing up and keeping distance in columns must be practised and insisted on. Even those who have the greatest horror of formalities must again agree that smart drill in close formation must be practised, not only on the parade-ground but in the field—if not as a means of instilling discipline, at any rate, as practice for moving troops in compact bodies as a preliminary to engaging the enemy. Everybody must, however, admit that the greatest stress must be laid on such points as self-reliance and precision on the part of Officers; their emancipation from the mechanically commanded battalion; on rapid change to the order of attack, and *vice versâ;* on skill with the rifle till it is loaded and fired with mechanical precision; on the strictest fire discipline; on correct and well-delivered volleys; and on steady and well-controlled file firing. But if the cut-and-dried form is to be preferred to dispositions made to suit time and place, which certainly no man in his senses could dream of, the dressing and grouping of skirmishers would be first thought of, and only afterwards the configuration of the ground. But we cannot hope to get steadiness, attention, and what is generally termed "troops well in hand," by drilling in close formation only; we

must use and practise the formations for attack and defence where there is less immediate supervision of the superiors, where the chains of responsibility are long and consequently weak, and where it is consequently desirable to appeal to the spirit and intelligence of the individual and subordinate commanders. For what do we really get in the end in the way of discipline brought about by everlasting drill? Surely the man who intentionally goes to the "left about" when ordered to the "right about" is simply a lunatic.

Besides, it can be practically shown that a regiment, without being overdrilled, can, with rational education and training, be quite smart and steady enough for all tactical purposes, and quite enough so even to please the eye. A regiment must *look well*, and there is no reason in the world why it should not and be efficient at the same time, in point of fact, being efficient ought to make it look well. But ugly absurdities should not be mistaken for good looks; stiffness and clumsiness should not be preferred to suppleness and activity; it is much better to have a few simple easy forms, useful and applicable at all times and places, than a variety of complicated ones of use only under certain conditions.

It is a peculiar feature in our profession to be strictly exacting, and to set to work, regardless of consequences, without misapplied philanthropy or misplaced indulgence, in spite of all our natural feelings of kindliness and mercy for others.

But all this, like every other sensible system of training the soldier, has an *object*, it makes the man think, it is not, in fact, only the *imperative* of discipline, it is the *postulate* of reason as well.

But I deny most emphatically that I wish in any way to interfere with the most implicit obedience; on the contrary, I wish to strengthen it, but on ethical principles. Some may say to this that the superior cannot be "requested" to give with every order the "reason why;" this needs of no argument. But do not let us lose sight of the fact that, if the inferior has by training and experience once grasped the feeling that all orders arise from necessity, this idea will not forsake him either in peace or war, and will exact implicit obedience from him in all matters, no matter whether he knows or understands the reasons or grounds.

Next comes the question: Should we, to a certain extent, *practise* in one way and *execute* in another?

Now, the disciples of strict drill maintain that discipline is best attained by the drilling of certain forms which, however, have nothing to say to such as would be used for training troops for war; "*for the very fact of these forms having no practical object kills the last vestige of refractoriness, by suppressing all private conviction in the matter.*" In other words, this means that the soldier must be made pliable by destroying his power of thought, as if in making any reasonable demands we ought to be afraid of the reasoning powers of the individual on whom they are made! The tendency of all this drill is then clearly and designedly to paralyze the *power of reasoning*.

Such an unconcealed, I may say, barefaced avowal of the object of drill, as is given in the work, "The Method of Disciplining Troops," is *positively nothing more than a disgrace to the nineteenth century*.

Of course all skill, all dexterity, all accomplishments are arrived at by *preliminary practice*. We learn to write by first making strokes or portions of the letters, but we do not polish up our hands to discipline them for writing. We learn to shoot by practising presenting, aiming, and pulling the trigger; but the rifleman would profit little if, as a preliminary to shooting, he was first taught skating or some other totally different accomplishment. In fact, the preliminary training must form part of what we expect to see *performed*, or what constitutes the subject of the training, and not something totally

different. Ordinary common sense must look upon the time spent in such absurdities as lost, and it is so, as a fact.

Looked upon by the light of day, the whole thing is a delusion, a kind of nervous excitement produced by the "one" "two" of a well drilled company—a nervous excitement by which men of a *sensitive nature* are impressed with ideas of order, flexibility, discipline, and high fighting qualities. *But unless we look upon it in the light of a medium* it can only give the impression of a poor attempt at playing at soldiers.

Listen to the opinion of a Prussian author, one whom we have already quoted: "The bravest soldier," he says, "is the man who has never been under fire. The *habit of drill* can be so strong in him that he moves *for a certain time* on the field of battle as if he were at manœuvres. *But only for a certain time*, that is to say, so long as he does not know the danger he is exposed to. . . . These are critical moments. A few Officers have *the strength of mind* to be equal to it, and have the power of reviving the expiring courage of their men and carrying them with them."

In other words this means: *The charm or spell by which drill is supposed to hold men fast, vanishes in time of danger, and only moral power is then equal to the occasion.*

Moral Power.

We have paid much attention to the *knowledge* and *power* of the soldier, almost exclusively so, as if the *wish* hung back of itself. But the wish is the chief thing, and care should be taken that the *negative* wish should not only be suppressed but the *positive* wish strengthened. It is only thus that the "*most daring*" determination which our Regulations describe as "the best" *can really be arrived at.* The same Regulations do not, without reason, describe the first principles of training the recruit as "*based on moral education.*"

And even granting that we have no such strong impulse to awaken the fighting powers of our Army, as, for instance, there is in the Turkish fanatical faith, the Russian gravitation towards Constantinople, or the French national burning for revenge, we should all the more on this score, by *fostering the love for the dynasty, strengthening the bonds between Officer and soldier, raising and strengthening the tone and feeling, and awakening a spirit of duty and self-sacrifice,* find some other means of really training our Army to be a thoroughly devoted and reliable one.

A distinguished General once said to me that when he was commanding a Hungarian regiment in the Italian campaign he was asked whether he could rely on his men, and he felt he could answer that they would certainly do their duty for the sake of their Colonel. And this proved to be true. The affection of men for their Commanding Officer can do great things, but it must be more than mere sympathy, it must be an affection amounting to a devotion of the most completely confiding and self-sacrificing nature. To be able to gain an affection *of this kind*, however, is not the gift of all, for a good disposition and study is not sufficient; *popularity-hunting will never do it.* We must have a fellow-feeling for our subordinates, and then only can we gain their hearts. But *to display* this fellow-feeling only will do no good. You will never win the hearts of men unless your heart is really with them. Unfeeling men are to be avoided just as those hypocrites who are cunning enough to feign a fellow-feeling. They are left in the lurch the moment the game they are playing is laid bare, and they are then the more hateful as we feel they have deceived us. Ordinary individuals have far greater instinctive powers of discernment in these matters than most people give them credit for.

It might be urged by those who object to these principles that it would never do if a regiment would only follow Colonel A and not Colonel B. And it would certainly never do; but the *other* kinds of moral motive power which I have alluded to, ensure troops doing their duty under any leader. If, however, our aims are higher than this, nothing but personal influence can attain them. Rustow is perfectly right in saying "the influence of a Commanding Officer does not arise from chance or accident. He who can get more from his men than can his opponent from his, is always at an advantage."

An Austrian author, describing the habit of discipline in the observation of certain forms as the only means at our disposal, says literally, "It is a myth that in the rapid conversion of our human material so-called beloved leaders arise, round whom men rally with devotion in the hour of battle." Now, to those who know troops by personal contact, and have a fellow-feeling for them, there is, thank goodness, *no myth* about it whatever. *Affection* is a thing *quickly* acquired, but *habit* is a matter of *time*. If the rapid conversion of our human material is dangerous to one of these, then I should say that habit is most likely to suffer in this respect. The filling up of the ranks with the reserves, the marches for concentration, and the first, though perhaps ever so small, engagement, are enough to make a commander liked or disliked by his men. Aye, it only requires a moment or so in the hour of danger for a really first-rate man to gain the affection of his inferiors.

One of the most important conditions, and at the same time a useful lever for morally improving the soldier, is *the relation that exists between Officer and man*.

This relation is in certain armies based on tradition. Based on conditions that have still something patriarchal about them, and the social standing of the subaltern Officers, it is in Russia far more direct and intimate than in other countries, and is, perhaps, too familiar. The Prussian Officer, as we all know, having a social standing of the first rank in the country, moves in the best society in consequence, and being represented with his men by excellent non-commissioned officers, is brought far less in contact with them, in fact, his relations with them are almost of a purely duty nature. With us the relation varies very much in the different branches of the service according as the Officer lives more or less in close contact with the men.

But on the whole we might observe that, having due regard to the peculiarities of the majority of nationalities in our Army, *the relation might with advantage be a closer one in the infantry*.

The soldier should, in fact, be looked on as a man, and what is more, be made to feel as a man. The Officer need not be always on duty from his point of view. Without causing any undue familiarity he can, by daily intercourse with his men, get opportunities, while fully maintaining his position, of showing himself in the light of a sympathizing fellow-creature instead of the mere superior, in caring for their interests and doing all in his power for their material welfare.

If the bonds between Officer and man be closely drawn, the former ought never to find it difficult to arouse, without the use of empty phrases, in a way that suits the individual character of the man, such qualities as love for King and country, pride in himself as a soldier, ambition, *amour propre*, a soldier-like feeling of obedience from self-conviction, and a feeling of *camaraderie* and attachment to his regiment. No stone should be left unturned to raise the tone and feeling of the soldier. We can well afford in this to be a little indulgent in insignificant matters; we must not think it serious if regimental feeling goes so far as to make the soldier look down upon other regiments; give the soldier if possible recreation at the right time; put up with his light-heartedness, and even turn it to account—*and*

above all things take care not to get into the habit of continually finding fault, rather bestow praise, even if it is only half due. Approbation is better than blame; it is the indispensable forerunner of *amour propre*, attachment, and cheerful labour. Constant finding fault produces, by the blunting effect it has on the feeling, the most difficult evil to get rid of—apathy.

The Officer should have all those moral qualities we look for in the soldier in a higher degree. We have to produce *military characters*, independent, cheerfully energetic, and thoroughly conscientious men. Though many may look on *converting soldiers into machines* as a preparation for our next war, the intelligent man will look for it more by fostering their *individuality* and *initiative*. For the shorter the time the fight lasts, the greater is the necessity for seizing opportunities without waiting for orders. The more murderous the fire, the more questionable is the possibility of giving orders, and the more frequent the loss in Commanding Officers, whose regiments, however, cannot stop in critical moments to have the command taken over. The greater the friction, the more is it desirable to have, instead of a machine-like Army, a living organism, the parts of which can act independently in the spirit of the general desire.

It would appear, therefore, all the more desirable that the higher leader should, instead of making his subordinate Officers go in leading-strings, direct them intellectually, and so fashion their ideas, that he may confine himself to ordering what is only *absolutely necessary*, and leave the remainder to the initiative of his subordinates, feeling sure that though they may not act strictly in accordance with his *orders*, they are certain to act in accordance with his *intentions*. This, again, requires the relations between senior and junior Officers to be of the closest kind; to communicate our own ideas and convey our own ways of thinking to others is only possible with close personal contact. There are some Colonels and Generals who keep almost quite aloof from their Officers; very often this arises from an unfounded fear on their part that close contact with juniors is likely to affect their dignity. But the man who is firm in the saddle as a member of the military hierarchy feels no necessity for surrounding his person with obstacles to approach, which after all afford a very poor protection to the authority belonging to the *rank* only and not to the *person*, against the scepticism of juniors. A Colonel or a General should have the courage to be a friend and comrade *off duty*.

But when the increased demand for independent and self-relying Officers has been alluded to, it has been sometimes met with the question whether independence did not *already exist*, and only required to be *tolerated?* No! unfortunately it must be *cultivated*, for there are too many of our juniors whose minds are dull and without desire, who are only too glad to be relieved of all responsibility by the guardian of inactivity; and the lethargy which is the consequence lasts long after the original cause has been removed. Let everyone be given the full free scope allowed by the spirit of the Regulations, and let us trust to the responsible spontaneous action of our juniors. We must satisfy ourselves beforehand, however, by the *strictest* tests, that what is required is likely to be forthcoming, and distinguish between the criminal presumption of the impostor and the proved and consequently esteemed conscientiousness of the reliable man.

Everything that the junior does *cannot always be improved on*. Many an error in execution or even in resolution may be overlooked in order that power of resolve and self-reliance may not be interfered with. We should never let ourselves be influenced by temper or passion, and never colour the meaning of others. The eye-servant who tries to curry favour should never be encouraged, nor should the honest man, who, rather than try to ingratiate himself, makes himself perhaps disagreeable, be snubbed. *This is the way to*

produce military characters, otherwise we shall only produce *slaves*, who in the choice of "to be" or "not to be" purchase the "to be" with the surrender of their individuality, at first, perhaps, against the grain, but gradually with their moral emasculation appeased.

The Officer must be *naturally inspired by an ideal conception of his profession*. He will thus be proof against the attacks of materialism, and encouraged to face the trying duties of his calling.

Let the Officer remember that if he can oppose a living dam to the flood of the disorganizing tendencies of our days, these will break helplessly on the soundness of his strength of character. Let him acquire a pride in himself from the thought of the meritorious work he has done in yearly instilling into the minds of the 100,000 men or so that annually join the colours, a higher moral tone, a love of justice and order, and feeling and character—in fact, the blessings of civilization which they take with them to their distant homes, to there produce further benefits. The Officer thus fulfils in peace a mission just as noble in itself as is his bloody work in war. Let our Officers be firmly convinced that in days when opposite disuniting efforts are tending to undermine the monarchy, it is the Officers' duty to strengthen to their utmost the bonds that unite it, by instilling into the minds of the thousands that come from all parts of our wide Empire a feeling of unity in the whole Fatherland, and the desire to raise the national colours high above the petty strife of faction and party, remembering the noble words of the poet, "Austria is in the camp."

Let the Officer fully understand his position; let him raise himself above the ordinary level of moral courage, so as to be, in the closest sense of the term, the *soul* of his men, and lead them to victory. But the soldier, if the call or even the example of the Officer is to have any effect, must be susceptible and attached to him.

"Rubbish," I hear again the opponents of these ideas exclaim with a cold scornful sneer. Well, may they never be taught by disaster that troops that are drilled only and not educated will fail them in the hour of trial; may they never have to feel in the bitter hour of defeat what a difference there is between possessing and not possessing the affection—this supposed myth—of their men.

And now enough!

In view of the possibility of the monarchy having, at some not very distant date, to engage in a serious conflict, the traditional patriotism of the Austrian Army must and can imperatively call upon every man belonging to it, no matter what his station be, to take the most complete *loyal faith* as his sole guide, and follow the line which most surely leads to success.

There can be only *one right* way, for there is only one kind of truth. But it is difficult sometimes to find and recognize it; hence different views, different faiths.

Supported as I am in my belief when I think of the many high-minded and great men whose wise and reforming doctrines have led me to my present conviction, and when I call to mind how often many excellent troops of our Army, though undrilled, have shown the highest discipline in the dark days of misfortune, and by their spirit and moral strength have given the most unmistakable proofs of the greatest devotion, I will preserve unimpaired *a belief in men, a belief in my ideal, and a belief in the way in which it is attained.*

The meaning of this belief is contained in the—

ANSWER TO THE TITLE OF THIS LECTURE.

Let us not merely drill, let us educate.

THE INSTRUCTION OF SOLDIERS.

(Translated from the *Militär Wochenblatt*, by Major E. GUNTER, Garrison Instructor, S.E.D.)

[Although there are in this translation some valuable hints on the instruction of the soldier, the main object of its insertion is to show the vast influence which can be exercised by the Officers of an army in a nation where liability to military service is universal, and where the Government is monarchical.—L. A. H.]

THERE appeared in Nos. 37, 47, and 56 of this publication in the year 1884, certain essays on this subject, which, besides being interesting in themselves, especially merit our attention, as indicating clearly the very divergent views that prevail on the subject of theoretical instruction.

The views of the author of the essay in No. 37, viz., that it is desirable to have an official instruction book, drawn up as concisely as possible, is amply refuted in the subsequent essays, but General Prince Kraft zu Hohenlohe-Ingelfingen expresses the same wish in his "Letters about Infantry," and at the first glance it appears, in fact, as if such a wish were justified. Meanwhile the authorities will, it is presumed, never fetter the spirit of Officers by systematizing and regulating the theoretical instruction of the soldier, and every wish to this effect will, it is to be hoped, remain ungratified.

Decades ago such desires found expression, and have often recurred, but as yet without result.

The existing instruction books are fully sufficient, and a new issue, which should contain only that which it is obligatory for a soldier to know, ought to meet with little approval in the Service.

On the other hand, it would be a false conception to substitute a more comprehensive book, which, while making good all the defects of the text-books hitherto in use, included and combined all their advantages. And for this reason, that the power of comprehension and capacity of the soldier is always very different according to his home and early school training. Is the sharp-witted loquacious Berlin man only to learn just as much as one who cannot speak German at all? The soldier of excellent school education no more than he who has never crossed its threshold? The man of active mind only as much as the man of dull and slothful brain?

I am of opinion that but little depends on the *Book* of Instruction. That work which is most suitable for the particular branch of the Service is best. Beyond this it is almost a matter of indifference which book is chosen. All books are, however, written more for the Officer, whose business it is with their aid to teach as much as he possibly can to the soldier in whose hands he places them.

One thing—and in my opinion the most important of all—I miss in the three essays, viz., that, to attain success, it must never be forgotten, that it is "the spirit which giveth life." It is the soul which enlightens the whole teaching. Above all, it is necessary that the Officer be a good *instructor*.

In regard to this I should here like to make a few special remarks.

An entire mastery of the subject, constant practice, and a quick practical understanding, do not suffice to make a good instructor.

Fortunately the gift of rhetoric is not necessary for this, but under all circumstances the Officer must possess a certain *military* eloquence in order to make himself entirely the master of his pupils. In a few powerful words he must be able to indicate the main points of his meaning.

Then he must be able, in order to kindle enthusiasm in his hearers, *to feel it himself;* he must have a high ideal of his high calling. Only thus can he, in teaching, gain the hearts and engross the attention of his hearers.

According to the essay in No. 56 the teacher must especially take into consideration the soldier's capacity for thought. I am of this opinion, but think rather that, in teaching, the *feelings* of the men must be at least equally considered. In the first place, therefore, the Officer must win the implicit confidence of his men. These must see and feel that their Officers have a warm *sympathy for* them, that they are not only concerned about their own welfare, but are also anxious for the well-being of those under them, that they do not always blame even faults and blunders, but, wherever it is practicable, approach them with words of guidance and instruction, and only punish where the laws of good conduct, of right and military discipline, have been *wilfully* infringed.

In teaching, the Officer should speak simply and fluently. He must place himself on a level with his soldiers in order to make himself understood by them, but then, again, he must raise them as far as possible to his own level, giving due consideration to the difference of their intellectual powers and characters.

There are two other points I would urge :—

First. The Officer often has opportunities in imparting instruction of working on the sense of religion of his men. He is their teacher, their instructor, and, therefore, it is his duty to influence them beneficially in this respect also. This is by no means difficult for the Officer, provided he does not pose as a saint, but chiefly gives proof by his own personal bearing that he is deeply penetrated with the teaching and spirit of the Christian religion.

If he calls on his men in a quiet moderate way to hold fast to the fear of God and to an honest right-minded life, if he appeals to the sense of right latent in the heart of even the most reprobate of men, it will be easier for him to produce good soldiers than if he attempted to do it in any other way. I have often seen in my experience that when an Officer has spoken in inspired tones about the sanctity of the oath, the colours, the call of duty, &c., the men are more deeply moved than when later on in church a preacher has touched on the same themes.

The men willingly allow themselves to be influenced by their Officer, if he only once begins in a right manner, because they are in daily intercourse with him. For this reason the calling of the Officer and teacher is no unthankful one. Let the Officer but first bring up the soldier as a good *man* and then he will of himself become a good and efficient *soldier.*

After 1866 it was often asserted that the Prussian Schoolmaster had won the battles! I am deeply impressed by the truth of the expression, if by "Schoolmaster" is meant the Instructor in uniform, the Officer, who through long years of painstaking laborious instruction had taken care, at every opportunity that afforded practical instruction, to inculcate at the same time a deep sense of duty, and a high feeling of honour. Rooted in these two qualities, all military virtues spring up of themselves.

Secondly. We live in anxious times. The crassest egotism, pursuit of pleasure, shirking of work predominate. The powers of evil and of darkness burrow hidden under ground, and gnaw at the roots and the marrow of the State. It is, therefore, surely the duty of every right-minded man not to look on idly, but to step forward boldly with raised visor and grapple with

the difficulties in that position in which Providence has placed him, mindful of the exhortation of our most ideal poet:—

[1] "However small thy world may be,
Do thou but lead it right,
Thy work for *good* let all men see,
Although that work be slight."

The Officer shall not and must not enter into politics, but I consider it his *duty*, when imparting theoretical instruction, to indicate in a few words that go straight to the point the object and aims of the democrats and their worthless folly.

Division of property and universal equality! That is, and has been, as long as the world has existed, the object of anarchical efforts.

Now, the dullest recruit comprehends that even as a company cannot stand and can effect nothing without a vigorous well-ordered regiment, so without a similar State Government a nation must perish. Moreover, everyone must understand that the ideas of the so-called benefactors of the people are mad folly, if he only pictures to himself the land of his village parcelled out in equal proportions to all the inhabitants, and if it be considered that one is strong and healthy, another weakly, one must support parents and relations, the other not; one has many stalwart sons who help him in husbandry, another is childless or with only weakly children who require constant care; one is industrious and economical, the other idle, wasteful, drunken, &c. How long would the much-prized equality and equal division of property remain; and when would it require to be redistributed? In my view such and similar observations should equally form part of the instruction given.

Not only during the instruction in the already-mentioned themes—profession of the soldier, the oath, the colours, the call of duty—but the instruction on "Duties in General," "Use of Weapons," "The Duties of Reserves," &c., will afford fit opportunity for similar observations.

The sense of the people, and especially that of the simple straightforward man, is sound. It is only necessary for everyone in authority whose calling it is, to *influence* the broad masses in a proper manner. I consider no one is more called on to do this than the Officer through whose hands pass in the course of years so many thousands of Germany's best sons.

The Officer has unlimited influence. He can especially form and mould the minds of the recruits, and the good seed sown by the young Officer, who, inspired with glowing zeal, is an enthusiast in his high calling, will bear fruit in yet wider circles, and for a lifetime.

If each Officer will work in this spirit, then the State need never be endangered, for then the Army, the Reserves, the Militia—I think even the Landsturm—will be and continue a bright sharp weapon in the hands of the commander.

Loyalty to the Throne, faithfulness to the State, and warlike spirit, are deeply imprinted in the hearts of every German. In no other country in the world would the Officer find a more fruitful soil for culture than with us. The spirit, the understanding necessary to the reception of these lessons are transmitted by inheritance from father to son. In every labourer's cottage the portrait of the "Old Fritz," as well as the members of the Royal Family, and of the most celebrated Generals, are to be seen. This spirit must, however, be again and again carefully nourished and cherished if it is not, in time, to be extinguished in the hard-fought struggle for existence.

[1] I must apologize for paraphrasing this little bit from Schiller, but I think I have rendered the writer's meaning plainer than I could by giving the bare translation of the words.—Tr.

The story of the exalted House of Hohenzollern to whom God himself has imparted a special mission, the history of the Ruling House stands at the head of all military instruction as the history of our Fatherland! Above all things, let the young Officer inspire his soldiers with the motto "For King and Fatherland." Let him describe to them the features of Prussia and of Germany, the mighty power of our people in arms, and the great respect which, after hard fighting, it has won for us abroad. Let him detail to them the imposing strength of the Army and of the Navy, let him sketch their well-ordered organization.

Let him show them how our nation becomes more and more powerful under an energetic Government, and at the same time happier and more prosperous, but let him also lay stress on the fact that this proud edifice must totter and fall to pieces without the fear of God, without loyalty to the Throne, and Patriotism.

REVIEWS.

The Russians at the Gates of Herat. By C. MARVIN. London: Warne, 1884. Pp. 176. Weight 7 ozs. Price 1*s.*

Mr. Marvin is well known as the writer of many works on the Central Asian Question; this one being published as late as March of this year gives his most recent views on the subject.

The History of the Bengal European Regiment, now the Royal Munster Fusiliers, and How it Helped to Win India. By Lieut.-Colonel P. R. INNES. London: Simpkin, Marshall, and Co., 1885. Pp. 572. Size $8\frac{3}{4}'' \times 6'' \times 1\frac{1}{2}''$. Weight $2\frac{1}{4}$ lbs. Price 21*s.*

This distinguished regiment was enrolled in 1756, and the list of services it has performed is one of which any corps may be proud. "For many years," we read, "of the E. I. Company's wars and conquests, the Bengal European Regiment, expanding at times with several battalions, formed the main strength of the small armies which conquered and annexed the vast provinces and kingdoms now forming the Presidency of Bengal." The book contains, moreover, an interesting account of the origin of the Old Bengal Army.

The History of the First West India Regiment. By Major A. B. ELLIS. London: Chapman and Hall, 1885. Pp. 359. Size $9'' \times 6'' \times 1\frac{1}{4}''$. Weight 1 lb. 14 ozs. Price 18*s.*

As this corps has since its embodiment towards the close of the last century seen plenty of hard work in the field, the record of its services is something far different from a mere barren list of dates and names; and Major Ellis seems to be fully aware of the fact that the value of regimental histories for the outside world lies in their furnishing those details for which room is wanting in the despatches of Generals. In the introductory chapter are some suggestions, well worth consideration, for the more extended employment of West Indian troops in the Empire.

The Armies of the Native States of India. Reprinted by permission from "The Times." London: Chapman and Hall, 1884. Pp. 172. Size $7\frac{1}{4}'' \times 5\frac{1}{4}'' \times \frac{3}{4}''$. Weight 13 ozs. Price 4*s.*

On the matter with which this volume deals there are probably a variety of opinions, and therefore it is to be regretted that the writer should remain concealed and not add to his utterances the authority which may attach to his name and to the position he may hold. But, any way, the bold outspoken way in which he deals with this vitally important question deserves a reply, if there be one.

A Short History of the Naval and Military Operations in Egypt from 1798 *to* 1802. By Lieut.-Colonel Sir J. M. BURGOYNE. London: Sampson Low, 1885. Pp. 181. Size $7'' \times 5'' \times 1''$. Weight 15 ozs. Price 5*s.*

Few of the present generation are aware of the extent of the operations recorded by Sir J. Burgoyne, and in which France and England contended in the open field for supremacy in Egypt. It is to be regretted that the author has made this history so short, and has not given more details of a little-known episode of warfare in the desert.

Prehistoric America. By the Marquis DE NADAILLAC. Translated by N. d'Anvers. Edited by W. Dall. London: J. Murray, 1885. Pp. 566. Size 9″ × 6″ × 1¾″. Weight 2 lbs. 1 oz. Price 16*s.*

This most interesting work, amply illustrated, takes the reader back to the time when Man and the Mastodon strove with each other on the so-called New World. Without presuming to offer an opinion on the value of the inferences and deductions drawn by the author, we can warmly recommend this volume as full of valuable information.

Ballooning. By G. MAY. London: Symonds and Co., 1885. Pp. 94. Size 7½″ × 5″ × ½″. Weight 7 ozs.

This work gives a concise sketch of the History and Principles of Ballooning. It will probably surprise most people to learn that the first movement attempted to turn aeronautics into an aid for military operations was made so far back as 1794 by the French Government.

Examples, Conclusions, and Maxims of Modern Naval Tactics. By Commander W. BAINBRIDGE HOFF, U.S. Navy. Portsmouth: Griffin. London: Simpkin, Marshall, and Co., 1885. Pp. 136. Size 9″ × 6″ × ¾″. Weight 1 lb. 3 ozs. Price 10*s.* 6*d.*

"Naval Tactics," says the author in his preface, "means more than mere handling of squadrons. It means the whole science of the conduct of vessels, whether they act singly or in concert; how to keep them together at sea; how to operate along a coast; how to conduct them through the inland waters of an enemy's country; how best to guard them in regard to any particular environment, whether of wind, weather, or adversary; whether to attack or to retreat, and, if the former, how best to employ their weapons of offence and defence." After a preliminary chapter and one of definitions and explanations, Captain Hoff deals with War Vessels, the Ship and her Captain, the Evolutions of the Ship, the Ship in Action on the Open Sea, the Admiral and his Fleet, Formations, Evolutions of the Fleet, the Fleet in Action on the Open Sea, Other Duties of the Fleet in Time of War, and Defence of the Coast and Torpedo Flotilla Tactics. The book is a valuable Précis of Naval Tactics as laid down by well known authorities, with the author's conclusions therefrom.

Night and Fog Signalling Apparatus for the International Signal Book and Optical Telegraph of C. Vreede, Officer of the Royal Dutch Navy. Leiden: E. J. Brill, 1883.

The writer of this pamphlet puts before us wares both old and new, and proposes a system of four lengths of flashes and worked by mechanism, automatic or otherwise. As a step in the much to be desired establishment of an international code, this little work, which it should be mentioned is in English, is much to be commended.

Extract from the Bye-laws.

Section II.—Composition.

1. Princes of the Blood Royal; Lords Lieutenant of Counties; Governors of Colonies and Dependencies; Officers of the Army, Navy, Marines, Her Majesty's East Indian Military and Naval Forces, Militia, Yeomanry, Royal Naval Reserve, and Volunteer Corps shall be entitled to become Members, *without ballot*, on payment of the Entrance Fee and Annual Subscription.

N.B. Any Officer coming within the above definition, who may wish to become a Member of the Institution, can do so by copying one of the subjoined Forms, and inclosing it to the Secretary:—

Form for Becoming an Annual Subscriber.

_____ 18

It is my desire to become a Member of the Royal United Service Institution; and I hereby request and authorise my Agents [or Bankers], Messrs. _____, to pay my Entrance Fee (£1) and Annual Subscription (£1) now, and as it becomes due on the 1st of January in each year, to the Secretary of the Institution.

_____ Signature.

_____ Qualification for Membership.

Form for Becoming a Life Subscriber.

It is my desire to become a Life Member of the Royal United Service Institution; and I hereby authorise my Agents [or Bankers], Messrs. _____ to pay my Entrance Fee (£1) and Life Subscription (£9) to the Secretary of the Institution.

_____ Signature.

_____ Qualification for Membership.

2. Ex-Governors of Colonies and Dependencies, Retired Officers, Deputy Lieutenants of Counties, Civil Functionaries who are or have been attached to the Naval and Military Departments, the Master, Deputy Master, and Elder Brethren of the Trinity House, and Army and Navy Agents, shall be *eligible* to become Members by *Ballot*.

3. Gentlemen above the age of *fifteen*, whose names are on the list of the Commander-in-Chief for Commissions in the Army, or who are probationary for offices connected with the Naval and Military Professions, shall be *admissible*, by *Ballot*, to become Provisional Members from year to year, on payment of the Annual Subscription; and after they obtain their appointments, they may become ordinary Members on payment of the Entrance Fee.

N.B. Members admissible by Ballot must be proposed and seconded by two Members of the Institution, and their names will be submitted to the Council for election. Ballot papers may be obtained at the Institution.

Form of Bequest.

I give and bequeath unto The Royal United Service Institution, *situated in Whitehall Yard, London, the sum of*

to be applied in and towards carrying on the designs of the said Institution, such Legacy to be paid out of such part of any personal Estate not specifically bequeathed as the law permits to be appropriated by Will to Charitable Purposes.

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THE COUNCIL of the ROYAL UNITED SERVICE INSTITUTION are very desirous of obtaining the assistance of OFFICERS of the NAVAL and MILITARY SERVICES in carrying out the different Courses of Lectures at the Institution.

The Lectures, and the Discussions which follow them (or an Abstract of them), and Descriptions of Inventions, are published in the Journal of the Institution, subject to the discretion of the Council, and illustrated, when necessary, by Diagrams.

N.B.—Officers who will favour the Institution with a Lecture, or a Course of Lectures, are requested to communicate with the Secretary on the subject as early as possible.

By order of the Council,

B. BURGESS, Captain,
Secretary.